

## Systematics of the Subfamily Gelechiinae (Lep., Gelechiidae) in Korea II. Tribe Teleiodini

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**Abstarct** Korean species belonging to the Teleiodini Piskunov, 1973 are reviewed with a total of 20 species; of which 11 species of *Teleiodes* (*orientalis* sp. nov., *paraluculella* sp. nov., *klaussattleri* sp. nov., *cyrtocostella* sp. nov., *longivalvella* sp. nov., *yangyangensis* sp. nov., *flavipunctatella* sp. nov., *deogyusanae* sp. nov., *digitilobella* sp. nov., *soyangae* sp. nov. and *bradleyi* sp. nov.), 1 species of *Pseudotelphusa* (*acrobunella* sp. nov.), 2 species of *Telphusa* (*quercicola* sp. nov. and *nigrifasciata* sp. nov.) are described as new to science, with illustrations of their genitalia, and other 4 species (*Teleiodes linearvalvata* Moriuti, *Telphusa fugitivella* Zeller *T. inscriptella* (Christoph) and *T. comprobata* Meyrick) are reported for the first time from Korea. The status of genera in the tribe which has been poorly defined, is also discussed.

**Key words** Lepidoptera, Gelechiidae, *Teleiodes*, *Teleiopsis*, *Telphusa*, *Pseudotelphusa*, systematics, Korea.

### INTRODUCTION

The tribe Teleiodini Piskunov, 1973, which includes genera *viz.*, *Teleiodes* Sattler, *Pseudotelphusa* Janse, *Teleiopsis* Sattler, *Xenolechia* Chambers and some other genera, is characterized by distinct raised scales or tufts on the forewing and the modified 8th sternite of male, bearing a posterior fringe of hairlike scales. However the status of each genus in the tribe are poorly defined and their systematic positions of numorous species still remain in doubt.

Janse (1958) nominated the genus *Pseudotelphusa* separating from its related genus *Telphusa*, based on few differences of wing venation, no fringe scales on the costa in hindwing, and especially in the characters of male genitalia. He suggested that no distinct separable characters can be found between *Telphusa* and *Pseudotelphusa*, and he placed those species which have no gnathos and have a valva reduced to a bulbous base with very narrow costa in his new genus *Pseudotelphusa*. He also suggested that the European species *proximella* Hübner quite agree to the genus *Pseudotelphusa*.

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Whereas Sattler (1960) placed the former in *Teleiodes*, and also he insisted European species, *scalella* Scopoli should be placed in the genus *Pseudotelphusa* as well as other 2 species, *viz.*, *tessela* Linne and *trifasciella* Rebel.

The genus *Teleiodes* Sattler, 1960 has no striking separable characters superficially from the genus *Pseudotelphusa*, except several structures such as short uncus, horn-shaped gnathos in the male genitalia. Sattler (1960) grouped most of the European species, which have no gnathos and belong to the *Teleiodes*-complex, into the genus *Teleiodes*. However Piskunov (1981) absolutely separated *Pseudotelphusa* from *Teleiodes* by the absence of gnathos of male genitalia in his revision of the family Gelechiidae of the European part of USSR.

For the revision of Korean species of the group, all the species which cannot be assigned with certainty to any of the clearly defined genera are therefore tentatively placed in the collective genus *Teleiodes* Sattler, and species with bifid uncus are certainly placed to *Telphusa* Chamber, as Sattler (1982) suggested.

Among the previously known species of this group in Korea, *argobathra* Meyrick is placed in genus *Parastenolechia* as Kanazawa (1985) proposed. The species *inscriptella* Christoph, which has not been represented in any literatures since it was described from Yebreuska, Russia under the genus *Teleia* Henineman, shows nearly no distinct separable characters from the European species, *scriptella* Hubner in male genitalia, but the former looks different in superficial, especially in the markings of forewings and in its larger size. Therefore I propose newly to transfer *inscriptella* Christoph to *Telphusa*. A male specimen of the genus *Teleiopsis* Sattler, which is certainly an undescribed species, was collected in Chuncheon, S. Korea, but it is excluded in this revision, due to only a single specimen available. Among other genera of this group such as genera *Xenolechia* Meyrick, 1895 (type species: *aethiops* Humprey et Westwood, 1895) and *Adrasteia* Chambers (type species: *alexandriacella* Chambers, 1872), no species has been found to date in Korea.

On the other hand Pitkin (pers. comm.) suggested that some species have been placed in *Teleiodes* or *Pseudotelphusa* are considered to be removed to the genus *Carpatolechia* Capuse, 1964 (Type-species: *decorella* Haworth, 1812) by the genitalic characters. However most of the species in the tribe are still far from the completion for the status of the systematic position, and further studies are needed to clarify fully the relationships within this group, with a worldwide revision of all known species belonged to all the related genera.

This study is based primarily on Korean materials in the collection of the Center for Insect Systematics, Kangweon National University, Chuncheon, Korea, which were mostly collected in the Southernpart of Korean peninsula (refered to S. Korea). Few of them were collected from the Northernpart (refered to N. Korea) by the Hungarian expeditions since 1970. Forewing measurement is given from apex of the left to that of the right-hand wing. To describe new species and clarify the systematic position of the species, many of related European and Japanese species were examined, comparing with the structures of their genitalia.

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## SYSTEMATICS

Genus *Teleiodes* Sattler

*Teleiodes* Sattler 1960, Deut. Ent. Zeit. 7( I / II ) : 63.

= *Teleia* Hein., 1870, Schmett. Deutsch. 2, 1: 272.

Type-species: *Tinea vulgella* Hübner, 1810—1813.

Genus *Teleiodes* was erected by Sattler (1960), based on the type species, *vulgella* Hübner. The genus is closely related to other genera belonging to the tribe Teleiodini and is difficult to separate from allied genera by only external characters. The genitalic characters which were described by Sattler are given as followings: "In male genitalia 8th tergite usually triangular, and 8th sternite trapezoidal; uncus short, tongue-shaped with long bristles; gnathos horn-shaped; valva thin, sword-shaped with globula base; vinculum narrow, forming band; aedeagus slender, nearly straight, basal half tightly fused with chitinized vinculum. In female genitalia apophysis anterior is long, rodlike; ostium bursae chitinized; ductus bursae thin, twice as long as apophysis anterioris; signum hexagonal in outline."

Main characters for separating *Teleiodes* from *Pseudotelphusa* in male genitalia, even there is no remarkable characters in superficial, are generally based on the short uncus, horn-shaped gnathos, but most of the species represented here in Korea have no gnathos or rudimentary, and some have an elongated uncus. Whereas Piskunov (1981) placed all the species which have no gnathos in the genus *Pseudotelphusa*. However I consider the main separable character of the *Pseudotelphusa* from the *Teleiodes* is its uncus broadened at base and tapered to a fine tip, rather than presence of absence of gnathos, even the present status of the two genera is needed a further study to clarify their relationship until a worldwide revision of this group would be conducted in detail. Thus I tentatively place all of Korean species which do not represent the main characters of the genus *Pseudotelphusa*, even without gnathos, in the genus *Teleiodes*, and grouped all the species into 2 different groups; one without gnathos as *lucullella*-group, and the other with well developed gnathos an *notatella*-group.

Key to the species of *Teleiodes* based on superficial and male genital characteristics.

1. Gnathos rudimentary or absent (*lucullella* group) ..... 2

—Gnathos well developed ( <i>notatella</i> group).....	10
2. Forewing with a yellowish central patch on discal cell .....	3
—Forewing without yellowish central patch on discal cell .....	<i>digitilobella</i>
3. Yellowish central patch very small; uncus very short, rounded distally .....	<i>paraluculella</i>
—Yellowish central patch well developed; uncus elongate with an acute apex or spatulate with rounded apex .....	4
4. Uncus elongate with acute apex; Process of juxta tongue-shaped .....	5
—Uncus spatulate with rounded apex or semiovate with slightly extended apex; Process of juxta rather digitate .....	8
5. Valva thin, long, exceeded to the distal end of uncus .....	<i>longivalvella</i>
—Valva sickle-shaped, not exceeded to the distal end of uncus .....	6
6. Uncus moderate; valva nearly reached to the distal end of uncus .....	<i>orientalis</i>
—Uncus elongate, very long, with sharply pointed apex; valva short, strongly arcuated .....	7
7. Process of juxta moderate; valva rather slender; aedeagus rather small, bent at distal half .....	<i>cyrtocostella</i>
—Process of juxta very large; valva stout, sickle-shaped, aedeagus very large .....	<i>klaussattleri</i>
8. Uncus semiovate distally with slightly extended apex; valva thin, very long, exceeded to the distal end of uncus .....	<i>yangyangensis</i>
—Uncus elongate, spatulate; valva falcate or absent .....	9
9. Valva strong setaelike, thin; process of juxta rather clavate; aedeagus strongly curved near distal 3/4 .....	<i>flavipunctatella</i>
—Valva absent; process of juxta rather slender; aedeagus slightly bent near middle .....	<i>dougyssanae</i>
10. 8th sternite widely expanded to lateral sides, forming band .....	<i>linearvalvata</i>
—8th sternite trapezoidal.....	11
11. Gnathos small, horn-shaped; valva sickle-shaped; 8th tergite triangular in outline, anterior margin with semicircular protrusion at middle .....	<i>soyangae</i>
—Gnathos very large, tongue-shaped, with rodlike sclerotization along edge; 8th tergite semicircular, often with a small emargination at middle of distal margin, anterior margin almost trapezoidal .....	<i>bradleyi</i>

### *luculella* species—group

#### 1. *Teleiodes orientalis* sp. nov. 극동비늘뿔나방(신칭) (Fig. 40)

*Adult.* Wingspan, 14 mm. Head appressed with creamy white scales which their distal portion greyish brown. Tegula and thorax clothed with same coloured scales as head, but suffused with dark fuscous scales anteriorly on tegula and medially on thorax. Antennae about 3/4 of forewings; scape elongate, longer than 1/2 diameter of compound eyes; flagellum with dark fuscous rings in each segment, paler toward to end. 2nd segment of labial palpi thickened, dark fuscous on outer surface, few creamy white scales near base and middle, tip with white scales dorsally; creamy white above 3/4 of

upper side on inner surface; grooved beneath with rough scales laterally. 3rd segment as long as length of 2nd, with dark fuscous stripes at base, middle and before apex; apex white and pointed apically.

Forewings elongate, ground colour creamy white, suffused with dark fuscous scales; basal patch dark fuscous, often divided by pale brown scales near middle, starting from 1/6 of costa to 1/3 of inner margin obliqually; antemedian fascia dark fuscous, outer edge darker, finely serrated, some white or orange scales near 1/3, middle and 2/3 on outer edge; costal patch triangular, elongated along costa; a central bright-yellow patch well developed, rather ovate, lower edge mixed with dark grey scales rarely; median fascia rather broad, dark fuscous, oblique inwardly, often with few yellowish white scales near middle; terminal patch expanded to termen, suffused with dark brown scales, a row of dark fuscous scales represented longitudinally. Legs dark fuscous ventrally; hind tibia clothed densely with long hairs above, dark fuscous outwardly, but light brown inwardly. Hindwings grey.

*Male genitalia* (Fig. 2). Eighth tergite long, as long as length of genitalia (vinculum + uncus), posterior half with parallel lateral margin, with a pair of long hair-pencils at lateral bases; anterior margin with semicircular emargination. 8th sternite shorter than half length of tergite, with small median emargination on posterior margin, little expanded on lateral sides posteriorly. Uncus elongate, apex pointed, densely haired along laterally. Gnathos rudimentary, with spined membranous flaps laterally. Valva very strong, heavily sclerotized and strongly curved near 3/4, base inflated. Process of juxta spatulate, large. Aedeagus rather short, relatively thick, apex rather pointed ventrally.

*Female genitalia* (Fig. 23). Eighth segment strongly sclerotized ventrally and dorsally. Apophysis anterioris very thin, threadlike, about 3/4 length of abdomen; apophysis anterioris rather stout, less than 1/3 length of posterior. Ostium bursae on posterior margin of 7th sternite cup-shaped, with a deep emargination dorso medially; incurved along anterior margin. Ductus bursae membranous, thin, about 3/4 length of abdomen. Corpus bursae ovate, with a small appendix bursae near conjunction with ductus bursae. Signum hexagonal in outline with diagonal groove, rather tapered corner with finely dentate edges.

*Type.* Holotype: male, Sogumgang, Gangweon Prov., 23.V.1988 (K.T. Park), gen. prep. no. 1666. Paratypes: 1♀, Mt. Odae-san, Gangweon Prov., 26.VI.1989 (K.T. Park), gen. prep. no. 1936; 1♂, Miomote, Nigata Pref., Japan, 15.VI.1974 (A. Seino).

*Distribution.* Korea (South), Japan.

*Remarks.* This species is closely related to the European species, *luculella* (Hübn.) as in fig. 58, but the creamy white zone below costal patch and around yellowish central patch on forewing is less paler; the uncus of male genitalia is not round distally, much more elongated; the female genitalia is much more related to *longivalvella* sp. nov. or *cyrtocostella* sp. nov., but signum is smaller than those of the latters.

## 2. *Teleiodes paraluculella* sp. nov. 넓적판비늘뿔나방(신칭) (Fig. 41)

*Adult.* Wingspan, 10 mm. Head rather darker, appressed with brownish grey scales. Tegula and thorax dark fuscous. Second segment of labial palpi brownish grey on outer surface, paler than the

preceding species, some whitish scales suffused on inner surface, with white scales at apex; 3rd segment with two white stripes near 1/3 and middle, with white tip. Forewings narrow, ground colour geryish; basal fascia not distinct, composed of 3 scale-tufts: first dark grey on costa, middle one with yellowish scales and 3rd just below middle one; costal patch indistinct in outline, with a distinct scale-tuft at lower angle; central yellowish patch very small, a small scale-tuft which mixed with yellow and dark grey scales represented just below the yellowish patch; terminal fascia obscure, crossed forewing from 3/4 of costa to near tornus, with some yellowish scales at middle. Hindwings pale grey.

*Male genitalia* (Fig. 1). Generally it is very similar to the European species, *luculella* (Hüb.), but it can be distinguished from the latter by the strong and stout valva. Uncus very short, with rounded distal margin. Gnathos absent. Valva very strong, not reach to distal end of uncus. Process of juxta moderate. Aedeagus rather short, with inflated base.

*Female genitalia* (Fig. 20). Apophysis anterioris about 1/3 length of posterioris. Ostium bursae developed into a large hood-shaped sclerotization posteriorly; basal 1/3 narrower, forming a neck, broadened medially; distal half bifurcated into ventral plate and dorsal plate; ventral one longer than dorsal one, with a emargination on distal margin. distal part of 7th sternite sclerotized, triangularly protruded at lateral sides. Ductus bursae and corpus bursae missed during dissection.

*Type.* Holotype: female, Mt. Jeumbong-san, Gangweon Prov., 22.VI.1992 (K.T. Park), gen. prep. no. 1986. Paratype: 1♂, Mt. Chiag-san, Gangweon Prov., 23.VI.1977 (K.T. Park), gen. prep. no. 942 (right forewing missed).

*Distribution.* Korea (South).

*Remarks.* This species differs from the European species, *luculella* (Hbn.) in appearance by the narrow forewing, very small central yellowish patch and the absence of creamy white zone around the central patch, but the shape of male genitalia is very similar each other except the more stout valva. In female genitalia, apophysis anterioris much shorter; ostium bursae narrow at basal 1/3, emarginated on anterior margin, whereas almost parallel in *luculella* (Hbn.)—see fig. 21. Figures of female genitalia of *luculella* illustrated by Steuer (1988) seems to be mistaken.

### 3. *Teleiodes klaussattleri* sp. nov. 콘판돌기비늘뿔나방(신청) (Fig. 42)

*Adult.* Wingspan, 15–16 mm. It is very similar to the preceding species, *orientalis* in coloration, but generally larger, central yellow patch smaller on forewings. Head and thorax creamy white, evenly suffused with dark fuscous scales, anteriorly suffused with dark fuscous in tegula. Second segment of labial palpi dark fuscous on outer surface, creamy white, evenly suffused with fuscous scales on inner margin; middle and preterminal dark stripe of terminal segment indistinctly defined. Forewings ground color and markings very similar to the preceding species; central yellowish orange patch on discal cell rather dull, not bright as much as preceding species, speckled scarcely with dark fuscous scales below half, no white scales on anterior edge, few white scales on middle of posterior edge. Legs almost as same as the preceding species.

*Male genitalia* (Fig. 3). Eighth tergite rather short, round posteriorly, anterior margin with semi-

circular emargination, with a pair of long hair-pencils at lateral base. 8th sternite large, about 3/5 length of tergite, with rather deep median emargination on posterior margin and lateral expansion at both sides. Uncus very long, with sharply pointed apex. Gnathos rudimentary, with membranous lateral flaps on both sides. Valva slender, gently curved, sometimes tapered near tip. Process of juxta spatulate, about 1/2 length of valva. Aedeagus very stout, large, as same as length of uncus; numerous particles in vesica.

*Female genitalia* (Fig. 25). Eighth sternite wrinkled posteriorly; posterior margin almost horizontal, with small emargination at middle. Apophysis anterioris rather long, compared with the other species in this group. Ostium bursae beneath 7th sternite, without ventro-median plate; antrum large, weakly sclerotized, lateral margin pararell. Ductus bursae very thin, wider gradually from middle toward conjunction with corpus bursae. Corpus bursae ovate; signum hexagonal in outline, with diagonal groove, positioned near entrance.

*Type.* Holotype; male, Chuncheon, Gangwon Prov., 29.V.1989 (K.T. park et B.K. Byun), gen. prep. no. 1766. Paratypes: 2♀, same locality and date as holotype, 1♀, 13.VI.1989 (K.T. Park); 1♂, 1♀. Mt. Daesung-san, Pyungannam-do, N. Korea, 31.V.1985 (Vojnits et Zombori).

*Distribution.* Korea (South; North).

*Remarks.* Even this species is similar to the preceding and following species in superficial and male genital characteristics, but it is easily separated from the latters by the shape of ostium and antrum in female genitalia. Moths appear from the end of May to the early of June.

#### 4. *Teleiodes cyrtocostella* sp. nov. 판돌기비늘뿔나방(신청) (Fig. 43)

*Adult.* Wingspan, 13.5–15.5 mm. Head and thorax similar to the preceding species, but rather brownish. Second segment of labial palpi rather slender, outer surface dark fuscous, inner surface little paler than outer surface; 3rd segment with broad dark stripe at middle, but preterminal one rather narrow, well defined each other. Forewing markings rather obscure, central yellowish orange patch not well defined in male, but well developed into round shape in female, few white scales on anterior and posterior edge. Other markings on forewing not separable from the related species in the group.

*Male genitalia* (Fig. 4). Eighth tergite rather short, shorter than length of genitalia (vinculum + uncus); anterior margin with almost trapezoidal emargination. 8th sternite large, with broad lateral expansion and a small median emargination on posterior margin, length as same as that of preceding species. Uncus elongate, with a sharp distal end. Gnathos rudimentary, with lateral membranous flaps. Valva sickle-shaped, very strong, short, gently curved. Process of juxta similar to the preceding species, *T. klaussattleri*, but rather smaller. Aedeagus broad in basal half, narrower beyond middle, apex slightly curved with obtuse tip, with numerous particles in vesica.

*Female genitalia* (Fig. 22). Posterior portion of 7th sternite sclerotized, smoothly incurved on posterior margin, triangularly expanded at lateral sides, set with dense hairs. Apophysis anterioris and posterioris not differ from the preceding species. Ostium bursae on posterior margin of 7th sternite, cup-shaped, dorso-posterior margin deeply emarginated, with rather broader flaps, strongly incurved

along anterior margin. Ductus bursae thin, long. Corpus bursae semiovate. Signum similar to the preceding species, with rather coarsely serrated edges.

*Type.* Holotype: male, Mt. Dodram-san, near Icheon, Gyonggi Prov., 17.V.1990 (K.T. Park), gen. prep. no. 1930. Paratypes: 1♂, 2♀, same locality and date; 1♂, Mt. Kumgang-san, N. Korea. 27.V.1985 (Vojnits et Zombori).

*Distribution.* Korea (South, North).

*Remarks.* Moths were mostly collected in May, and seems to be univoltine in Korea.

##### 5. *Teleiodes longivalvella* sp. nov. 긴꼬리비늘뿔나방(신칭) (Fig. 44)

*Adult.* Wingspan, 13.5–15 mm. In superficial characters, this species is very close to the preceding species, but it can be easily separated from them in genitalic characters of male. Second segment of labial palpi rather slender, evenly dark fuscous outwardly, suffused with creamy white inwardly; middle and preterminal stripes on 3rd segment not well defined. Central yellowish patch on forewings rather elongate outwardly, dark grey scales well developed under the yellow patch. Other superficial characters are not separable from the related species of the group.

*Male genitalia* (Fig. 5). Eighth tergite long, as same as length of valva, anterior margin with almost semicircular emargination, some specimens slightly convex at middle. Length of 8th sternite about half of tergite, posterior margin with a small median emargination. Uncus rather long, with long setae on posterior half, apex rather pointed. Gnathos rudimentary, with lateral spinous flaps on both posterior sides. Valva thin, very long, further exceeded beyond distal end of uncus, base moderately inflated. Process of juxta spatulate, rather small, rounded, with narrowed neck. Aedeagus stout, shorter than half length of valva; apex rather pointed.

*Female genitalia* (Fig. 24). Eighth segment and posterior portion of 7th sternite similar to *orientalis* and *cyrtocostella* sp. nov. Apophysis anterioris rather short, shorter than length of ductus bursae. Ostium bursae on posterior margin of 7th sternite, cup-shaped, rather long, dorsoposterior margin with semicircular emargination at middle. The shape of female genitalia is very close to *orientalis* sp. nov. and *cyrtocostella* sp. nov, but it differs from the latters by the size, length and degree of emargination on dorso posterior margin of ostium.

*Type.* Holotype: male, Gwanglung, Gyonggi Prov., 17.V.1988 (K.T. Park), gen. prep. no. 1671. Paratypes: 1♀, same locality and date as holotype; Gwanglung, 1♂, 3♀, 31.V.1986 (K.T. Park et U.Park), 1♀, 3.V.1988 (K.T. Park); 1♀, Chunchenon, Gangweon Prov., 5.VI.1989 (K.T. Park et B. K. Byun).

*Distribution.* Korea (South).

##### 6. *Teleiodes yangyangensis* sp. nov. 여름살이비늘뿔나방(신칭) (Fig. 45)

*Adult.* Wingspan, 12–15 mm. Head rather dark. Other superficial characters are similar to the other species of this group. Some separable characters are shown in the well represented scale-tufts on forewings as followings: a small one at middle of basal fascia; 3 well developed tufts obliquely positioned on antemedian fascia, upper one mixed with reddish yellow scales, lower one dark grey; an-

other yellowish one near costa at anterior part of the central yellowish patch; the central yellowish patch distinct, often mixed rarely with dark grey scales posteriorly; a distinct yellowish white patch on costa beyond postmedian band. Head and thorax of female darker, and the yellowish patch on discal cell better developed than male.

*Male genitalia* (Fig. 6). Eighth sternite with broad lateral expansion and with a deep median emargination on posterior margin, about 3/5 length of tergite. Uncus semiovate, apex rather elongate, densely haired near apex and along lateral margin. Gnathos absent. Valva very thin, thread like, almost straight. Process of juxta digitate, but rather inflated near middle. Aedeagus stout, broader toward base, with a small ventral process.

*Female genitalia* (Fig. 29). Apophysis anterioris strong, longer than half of posterior. Posterior margin of 7th sternite slightly incurved, with triangular lateral expansion. Ostium bursae on posterior margin of 7th sternite, bell-shaped, slightly emarginated at middle of posterior margin. Ductus bursae thin, very long, with rather broad membranous antrum, as same as length of apophysis posterioris. Corpus bursae ovate, small, length about 1/6 of ductus bursae. Signum similar to the preceding species.

*Type.* Holotype: male, Yangyang, Gangweon Prov., 1.VII.1987 (K.T. Park), gen. prep. no. 1942. Paratypes: 2♂, 2♀, same locality and date as holotype.

Chuncheon, Gangweon Prov., 3♂, 6♀, 2.VII.1989 (K.T. Park).

*Distribution.* Korea (South).

*Remarks.* Moths appear mainly in July and seems to be univoltine in Korea.

## 7. *Teleiodes flavipunctatella* sp. nov. 노랑무늬비늘뿔나방(신칭) (Fig. 46)

*Adult.* Wingspan, 11–15 mm. Head greyish creamy, suffused with brownish grey. Thorax dark fuscous. Antennae simple, ringed with dark fuscous; scape elongate, dark fuscous. 2nd segment of labial palpi dark fuscous outwardly, with yellowish white stripe near 1/4 and middle; 3rd segment shorter than 2nd, with fuscous stripe at base, middle and prior to apex. Forewings ground colour and markings are similar to *yangyangensis* sp. nov., with well developed yellow patch at middle of cell, several dark fuscous scale-tufts represented irregularly; 3~4 scale-tufts anterior and above yellow patch, often mixed with yellowish white scales; obscure white fascia near middle and 2/3 of costa; cilia concolorous. Hindwings grey; cilia longer toward base.

*Male genitalia* (Fig. 7). Eighth tergite elongate-tetragonal, longer than a total length of genitalia; lateral margin almost paralell; anterior margin with deep emargination, with a pair of long hair-pencils at lateral base. Uncus tongue-shaped, rather elongate. Gnathos absent. Valva setaelike, tapered toward distal end, with strongly inflated base. Process of juxta digitate, but little variable in individuals; some specimens clavate at distal portion. Aedeagus stout, curved and truncated near 3/4, apex narrowed, with numerous particles in vessica.

*Female genitalia* (Fig. 27). Apophysis anterioris longer than half length of apophysis posterioris. Ostium bursae weakly chitinized, jar-shaped. Ductus bursae thin, very long, nearly twice of apophysis anterioris; ductus seminalis from posterior 1/3. Corpus bursae ovate; signum rather hexagonal in

outline but variable in shape, positioned at anterior third, with coarsely serrated edges.

*Type.* Holotype: male, Yangyang, Gangweon Prov., 1.VII.1987 (K.T. Park), gen. prep. no. 1675. Paratypes: 1♀, same locality as holotype, 26.VII.1987 (K.T. Park); Chuncheon, Gangweon Prov., 1♂, 26.IV.1989 (K.T. Park), 5♂. 7–9.V.1989 (K.T. Park), 3♂, 4♀. 16.V.1989 (K.T. Park), 9♂, 7♀. 29.V.1989 (K.T. Park), 1♂, 5.VI.1989 (K.T. Park), 6♂, 25♀, 11–13.VI.1989 (K.T. Park), 12.VIII.1988 (K.T. Park), 1♀, 7.VI.1990 (K.T. Park), 1♂, 3♀, 19.VI.1990 (K.T. Park); Yanggu, Gangweon Prov., 1♂, 15.VIII.1989 (K.T. Park), 1♀, 6.V.1990 (K.T. Park), 1♂, 3♀, 19.VI.1990 (K.T. Park), 1♂, 4♀, 4.VI.1987 (K.T. Park), 1♂, Mt. Dodram-san, Gyonggi Prov., 19.V.1990 (K.T. Park); Ara-dong, Jeju, Jeju Prov., 1♂, 17.V.1991 (K.T. Park); 1♂, Mt. Kumgang-san, Gangweon prov., N. Korea., 6.VIII.1975 (Papp & Vojnits), 1♀, same locality 26.V.1985 (Vojnits & Zombori); 1♂, Samji-yeon, Mt. Paekdu-san, N. Korea. 19.VIII.1977 (Dely & Draskovits).

*Distribution.* Korea (South, North).

*Remarks.* This species is one of the most common species of this group in Korea. Moths appear from the middle of May to the middle of August.

#### 8. *Teleiodes deogyusanae* sp. nov. 노랑무늬애비늘뿔나방(신정) (Fig. 47)

*Adult.* Wingspan, 9–12.5 mm. Generally this species is smaller than the preceding species. This species is not separable from the preceding species, *yangyangensis* sp. nov. and *flavipunctella* sp. nov. superficially, but it can be distinguished from the latter only by the genitalic characters.

*Male genitalia* (Fig. 8). There is no striking characters to be separated from the preceding species, *flavipunctatella* sp. nov. except the absence of valva in male genitalia. Some other separable characters are; 8th tergite rather longer than that of the latter, and less emarginated on anterior margin; process of juxta rather slender; ventral margin of aedeagus almost straight beyond basal 2/3, whereas relatively curved near 3/4 in *flavipunctatella* sp. nov.

*Female genitalia* (Fig. 26). Eighth segment moderately sclerotized. Apophysis anterioris short, shorter than 1/3 of apophysis posterioris. Ostium bursae weakly chitinized, with leaflike lateral plates. Ductus bursae thin, about 1.5 times as long as apophysis anterior. Corpus bursae ovate; signum near entrance of corpus bursae, larger than that of preceding species, hexagonal in outline, with finely serrated edges.

*Type.* Holotype: male, Chuncheon, Gangweon Prov., 1.VIII.1985 (K.T. Park), gen. prep. no. 1878. Paratypes: 1♂, same locality and date as holotype; Chuncheon, 1♂, 31.VII.1985 (K.T. Park), 1♂, 29.VII.1985 (K.T. Park), reared from *Quercus* sp., 1♀, 10.VI.1985 (K.T. Park), 1♂, 29.V.1989 (K.T. Park), 1♀, 7.VI.1990 (K.T. Park); Gwanglung, Gyonggi Prov., 1♂, 1♀, 13.VIII.1986 (K.T. Park), 1♂, 31.V.1986 (K.T. Park et M.K. Ko); 1♂, Mt. Chunggyae, near Suweon, Gyonggi Prov., 1♂, 19.VIII.1976 (K.T. Park); 1♀, Hwacheon, Gangweon Prov., 2.VII.1985 (K.T. Park), 1♀, Pyunchang, Gangweon Prov., 31.VII.1990 (K.T. Park); 1♀, Mt. Samag-san, near Chuncheon, Gangweon Prov., 19.VII.1989, 1♀, 22.VI.1989 (K.T. Park), 1♂, Mt. Deogyu-san, near Muju, Jeonbug Prov., 13.VIII.1985 (K.T. Park).

*Distribution.* Korea (South).

*Host.* Larva feeds on *Quercus* sp.

*Remarks.* Above two species are not only very similar to each other in superficial, but also in genital structures. A easily separable characteristic is the absence of valva. Most of specimens were collected from the end of May to the middle of August.

#### 9. *Teleiodes digitilobella* sp. nov. 쌍돌기비늘뿔나방(신칭) (Fig. 48)

*Adult.* Wingspan, 12–15 mm. Head pale brown anteriorly and greyish brown dorsally. Thorax and tegula greyish brown. Second segment of labial palpi pale grey medially on outer surface, darker toward base; Creamy thite on inner surface. 3rd segment more distinct and broad white stripes, apex white. Forewings moderate, evenly covered with greyish brown scales; 3 oblique fascia with well developed scale-tufts; antemedian fascia with 2~3 distinct dark grey scale-tufts, lower one most developed; median fascia with 3~4 tufts which suffused with few greyish brown scales; postmedian fascia with 2~3 tufts mixed with brownish scales. Hindwings pale grey; cilia paler. Legs fuscous ventrally; hind tibia clothed with long hairs above and brown scales laterally.

*Male genitalia* (Fig. 9). Eighth tergite triangular in outline, longer than a total length of genitalia; lateral margin incurved near middle; posterior half almost parallel; anterior margin with a deep emargination. Length of 8th sternite less than half of its width, slightly emarginated at middle of posterior and anterior margin. Uncus tongue-shaped, elongated with round apex. Gnathos and valva absent. Process of juxta digitate, arising far from each other at base. Aedeagus stout, almost straight with globula base; ductus ejaculatoris long and large, with curved sickle-shaped plate.

*Female genitalia* (Fig. 28). Apophysis anterioris rather short, about half length of posterioris. Posterior margin of 7th sternite curved inwardly, simple. Ostium bursae cup-shaped with round posterior margin, bearing short spine like hairs. Ductus bursae very long. Corpus bursae rather large; signum with rather tapering apex, with coarsely serrated edges.

*Type.* Holotype: male, Chuncheon, Gangwon Prov., 7.V.1989 (K.T. Park), gen. prep. no. 1800. Paratypes: 1♀, Suweon, 23.VII.1974 (K.T. Park), gen prep. no. 702; Chuncheon, Gangwon Prov., 2♂, 7♀, 1.V.1989 (K.T. Park), 1♂, 3♀, 7–9.V.1989 (K.T. Park), 2♂, 1♀, 16.V.1989 (K.T. Park), 1♀, VIII.1989 (K.T. Park), 1♂, 14.VIII.1987 (K.T. Park), 1♂, 8♀, 29.V.1989 (K.T. Park), 2♂, 11–13.VI.1989 (K.T. Park), 1♀, Mt. Chiag-san, 23.VI.1977 (K.T. Park), 1♂, 1♀, Mt. Kumgang-san, N. Korea, 24.VII.1982 (Forro et Ronkay).

*Distribution.* Korea (South, North).

*Remarks.* This is one of the common species of this tribe in Korea. Moths appear from the early of May to the middle of August.

#### *notatella* species-group

#### 10. *Teleiodes soyangae* sp. nov. 빗줄무늬비늘뿔나방(신칭) (Fig. 49)

*Adult.* Wingspan, 11.5–15 mm. Head pale brown anteriorly and greyish brown dorsally. Thorax greyish brown, with two dark brown spots posteriorly. Tegula greyish brown, with dark brown anter-

iorly. Antennae moderate, annulate with dark brown. Second segment of labial palpi pale grey medially on outer surface, darker toward base; creamy on inner surface. 3rd segment as long as 2nd, white band broad, more distinct, with white apex. Forewing moderate, irregularly scattered with greyish brown scales: antemedian fascia rather well developed obliquely, from near base on costa toward 1/3 of posterior margin, but ended beyond middle, with 2~3 weakly developed scale-tufts; costal patch triangular, weakly developed; a dark brown central patch obliquely represented on median fascia; postmedian fascia curved inwardly, rather pale beyond it; fuscous scales scattered near apex and along termen. Hindwings pale grey; cilia paler.

*Male genitalia* (Fig. 10). Eighth tergite triangular in outline, posterior half with parallel margin and anterior half evenly tapered; Anterior margin with a small semicircular process at middle. Uncus ovoid, with pointed apex, densely set with long setae. Gnathos small, spatulate. Valva almost straight, thin, base not inflated. Process of juxta shorter than the length of valva. Aedeagus very thick, about as long as valva; ductus ejaculatorius long, with large leaf like membranous plate.

*Female genitalia* (fig. 30). Apophysis anterioris broadly inflated at base, rather long, almost half of posterioris. Ostium bursae weakly sclerotized, forming semicircular in outline posteriorly. Ductus bursae long, broadened toward corpus bursae. Corpus bursae semiovate; signum rather small, flattened, positioned near middle.

*Type.* Holotype: male, Chuncheon, Gangweon Prov., 1.V.1989 (K.T. Park), gen, prep. no. 1761. Paratypes: 2♂, Chuncheon, Gangweon Prov., 1.V.1989 (K.T. Park), 1♂, 1♀, 7.V.1989 (K.T. Park), 1♀, 9.V.1989 (K.T. Park), 1♂, 1♀, 6.V.1989 (K.T. Park), 1♀, 16.V.1990 (K.T. Park), 1♂, 1♀, Mt Samag-san, Gangweon Prov., 19.VII.1989 (K.T. Park).

*Distribution.* Korea (South).

*Remarks.* The shape of male genitalia is similar to it of the European species, *notatella* (Hubner), but it can be separated from the latter by following separable characteristics: no densely squamose bulgæ on lateral margin of 8th tergite; gnathos broad, spatulate; process of juxta much shorter than the length of valva. Moths were mainly collected in May.

### 11. *Teleiodes bradleyi* sp. nov. 높은산비늘뿔나방(신청) (Fig. 50)

*Adult.* Wingspan, 13–14 mm. Head greyish brown. Thorax and tegula same colour as head. Second segment of labial palpi pale greyish brown, creamy white stripe near basal 2/3 and apex on outer surface, creamy white on upper surface and middle of inner surface; 3rd segment slightly longer than 2nd, with white stripe at base and middle, apex white. Forewings evenly clothed with greyish brown scales, fuscous scale-tufts irregularly scattered. Legs creamy white, mixed with grey ventrally; hind tibia clothed densely with long hairs above, mixed with few brown hairs laterally.

Female unknown.

*Male genitalia* (Fig. 11). Eighth tergite very short, semicircular, round distally, with almost trapezoidal emargination on anterior margin. 8th sternite large, trapezoidal. Uncus short, rather globular, bearing long setae laterally, with small pointed apex. Gnathos well developed, tongue-shaped, hollowed inner surface with well sclerotized lateral lods. Valva very weak, thin. Process of juxta digi-

tate, rather long. Aedeagus nearly straight, with inflated base.

*Type.* Holotype: male, Mt. Gyebang-san, 1,000 m above sea level, Gangwon Prov., 24.VIII.1989 (K.T. Park), Paratypes: 2♂, same locality as holotype, 2.VIII.1992 (K.T. Park).

*Distribution.* Korea (South).

*Remarks.* This species seems to be belonged the genus *Paratelphusa* which was nominated by Janse, separating from the genus *Telphusa*, based on the characteristic shape of gnathos. However author considers that the character is not enough good to separate the genus and thus this species is placed in the genus *Teleiodes*. This is one of rare species of the group in Korea.

## 12. *Teleiodes linearivalvata* (Moriuti) comb. nov. 검은줄비늘뿔나방(신청)

*Telphusa linearivalvata* Moriuti, 1977, Tinea, 10(13): 197-198.

*Adult.* Wingspan, 13-17 mm. This species is very similar to *Telphusa syncratopa* Meyrick which is known from China (Tienmusan) in the pattern of markings on the forewing and male genitalia.

*Male genitalia* (Fig. 12). Eighth sternite peculiar shape as shown in the figure, posterior margin with deep median emargination, lateral arms tapered. Uncus elongate-oval, with ventrally curved and rather pointed apex. Gnathos slender, strongly sclerotized. Valva long, threadlike, with a bulbed base. Process of juxta slender, gently curved inwardly, bearing short hairs in apical portion. Aedeagus nearly straight, about 2/3 of valva, narrower toward apex beyond basal 2/3; no cornutus.

*Female genitalia* (Fig. 39). Apophysis anterioris broadly inflated basally, shorter than half length of apophysis posterioris. Ostium bursae large, well sclerotized, tubular, elongate posteriorly, with short hairs on both lateral sides. Ductus bursae as long as apophysis anterioris. Corpus bursae semiovate, large, nearly equal to length of ductus bursae; signum hexagonal, with finely serrate edge.

*Material examined.* Chuncheon, Gangwon Prov., 2♂, 30.VII.1986 (K.T. Park), 1♂, 3.VI.1988 (K.T. Park), 1♂, 25♀, 29.V.1989 (K.T. Park); 1♂, Mt. Seolak-san, Gangwon Prov., 9.VIII.1989 (K.T. Park); Mt. Odae-san, Gangwon Prov., 1♂, 22.V.1989 (K.T. Park); 1♂, 27.V.1991 (K.T. Park); 1♀, Yangyang, Seomyun, Gangwon Prov., 4.VI.1987 (K.T. Park); Gwanglung, Gyunggi Prov., 2♀, 8.VI.1977 (K.T. Park), 3♀, 10.VII.1982 (K.T. Park), 1♂, 1♀, 17.V.1988 (K.T. Park), 1♂, 4.VIII.1988 (K.T. Park), 2♂, 1♀, 13.VII.1986 (K.T. Park), 1♀, 31.V.1986 (K.T. Park), 1♀, 31.V.1986 (K.T. Park); 1♀, Mt. Myungji-san, Gyunggi Prov., 23.V.1991 (K.T. Park); 1♂, 2♀, Mt. Dodram-san, Gyunggi Prov., 19.V.1989 (K.T. Park); 1♂, 1♀, Muju, Mt. Deogyu-san, Jeonbug Prov., 13.VIII.1975 (K.T. Park).

*Distribution.* Korea (South), Japan.

*Remarks.* Uncus of male genitalia of this species is not bifid, but it looks different from other members of the known *Teleiodes* species, especially in the shape of 8th sternite. However, based on the characteristics of uncus and gnathos, I tentatively remove this species in the genus *Teleiodes*. Moriuti(1977) suggested that this species is superficially close to *T. necromantis* and he illustrated their male genitalia of both species for comparision in figures, but the figure of *necromantis* Meyrick illustrated by him seems to be a different species. This species is a common species in Korea. Moths appear from the end of May to the middle of August.

### Genus *Pseudotelphusa* Janse

*Pseudotelphusa* Janse, 1958, Gelechiidae. The South Africa 4(1): 68.

Type-species: *Telphusa probata* Meyrick, 1909.

Janse(1958) erected this genus separating from the genus *Telphusa*, based on following characteristics: cell less than 2/3,  $R_4$  &  $R_5$  stalked for 1/3 of  $R_5$ . This genus also is not easy to separate from the genus *Teleiodes* in appearance. Piskunov(1980) placed all those species of *Teleiodes*-complex which has no gnathos in male genitalia, in the genus *Pseudotelphusa*. On the other hand Sattler (*pers. comm.*) insists on that general shape of male genitalia, rather than gnathos, should be considered as separable characters of the genera. Here, in the review of Korean species of the group, author followed after his opinion.

Key to the species of *Pseudotelphusa* based on superficial and genital characteristics.

1. Ground colour of forewing fuscous; 8th tergite very short, anterior margin convexed at middle; uncus rather short; process of juxta digitate ..... *fugitivella*  
 —Ground colour of forewing yellowish brown; 8th tergite rather long, anterior margin not convexed at middle; uncus elongated, rather slender; process of juxta capitate ..... *acrobrunella*

#### 1. *Pseudotelphusa fugitivella* (Zeller) 갈색비늘뿔나방(신청) (Fig. 51)

*Gelechia fugitivella* Zeller, 1839, Isis: 200.

*Pseudotelphusa fugitivella*: Piskunov, 1973: 939.

*Teleiodes fugitivella*: Lempke, 1976: 25.

**Adult.** Wingspan, 12–14 mm. Head creamy white, suffused with light brown scales. Thorax and tegula brownish grey. Scape of antenna elongate, rather small. Second segment of labial palpi thick, with roughened scales beneath forming furrow, dark fuscous on outer surface, creamy white half above in inner surface. 3rd segment as same as length of 2nd, dark and white stripe well defined each other. Forewings evenly covered with dark fuscous scales before 3/5, with 5~8 small scale-tufts irregular; outer zone beyond 3/5 paler, suffused with brownish grey, often longitudinal dark line developed. In European specimens some orange or yellowish chocolate brown scales represented at 1/3, middle and 2/3 of antemedian fascia, but not developed in Korean specimens.

**Male genitalia** (Fig. 13). Eighth tergite short, little shorter than length of 8th sternite, posterior half semicircular, set with long hairs on posterior margin, rounded; anterior margin convexed at middle. Length of 8th sternite about half of width, posterior margin with deep emargination; apex rather pointed. Uncus broad, spatulate, with dense setae laterally. Gnathos weakly developed, attached to membranous tube. Valva thin, long, evenly tapered. Process of juxta digitate, slightly longer than

half of valva. Aedeagus long, longer than length of valva, inflated at base, obliquely truncated at caudal portion.

*Female genitalia* (fig. 31). Apophysis posterioris very long, as long as length of abdomen; apophysis anterioris rather long, about 2/5 of posterioris. Ostium bursae divided into two lateral flaps, distally rounded. Corpus bursae ovate; signum rather large, relatively broad groove, with coarsely serrated edges.

*Material examined.* 1♂, Mt. Odae-san, Gangweon Prov., 26.VI.1989 (K.T. Park), gen. prep. no. 1803; 1♀, same locality and date; 1♂, 1♀, 6.VIII.1989 (K.T. Park et B.K. Byun): Mt. Jiri-san, Jeonnam Prov., 19.VII.1981 (K.T. Park).

*Distribution.* Korea (South). Russia, Europe.

*Remarks.* Piskunov (1973) described a new species *vovkella*, separating from *T. fugitivella* Zeller based on the characteristic of aedeagus in male genitalia. However the holotype of *vovkella* Piskunov is probably identical to that of *fugacella* Zeller, on the other hand its female genitalia is that of *scriptella* Hbn. according to his illustration (Piskunov, 1973: 195–196). Thus it should be placed in the synonym of *fugacella* Zeller.

The European species, *fugacella* is closely related to *fugitivella*: the paratype (B.M. genital slide no. 7366) is very similar to the paratype (B.M. gen. slide no. 7364) of *fugitivella* in male genitalia, but it is separated from the latter by the following genital structures: uncus slightly shorter, setae on lateral sides stronger; gnathos better developed, tongue-shaped; process of juxta thicker; aedeagus shorter, shorter than length of valva.

## 2. *Pseudotelphusa acrobrunella* sp. nov. 오렌지비늘뿔나방(신칭) (Fig. 52)

*Adult.* Wingspan. 11–13 mm. Head ochreous, thorax yellowish brown. 2nd segment of labial palpi rough-scaled, yellowish white, suffused with fuscous scales at basal half and subapical portion on outer surface; terminal segment slender, as long as 2nd, with two dark rings, one at 1/3 and the other at subapical portion broad, with white pointed apex. Forewings ground colour yellowish brown with 3 pairs of distinct dots by raised scales tufts, at about 1/5, 2/5 and 3/5; 1st and 3rd pairs usually with upper one smaller, middle pairs with lower one inconspicuous; 3 greyish dark fascia along costa, 1st elongated from base to 1/4 of costa, 2nd at about 2/5, 3rd at 3/5; postmedian fasia convex outwardly, followed by yellowish white zone, beyond it dark fuscous scales irregularly scattered; a large dark white zone, beyond it dark fuscous scales irregularly scattered; a large dark brown patch well developed on tornus. Cilis grey, speckled with fuscous scales near apex and along termen. Hindwings grey, trapezoidal, apex sharply pointed.

*Male genitalia* (Fig. 14). Anterior margin of 8th tergite with almost semicircular emargination, posteriorly rounded. Length of 8th sternite about 1/4 width, posterior margin with median emargination. Uncus with long and narrow basal stalk, dilated caudally with pointed apex, densely set with setae. Gnathos absent. Valva thin, evenly tapered, acute, base inflated. Process of juxta slender with clavate distal end, about 1/3 length of valva. Aedeagus stout, longer than valva, base inflated.

*Female genitalia* (Fig. 32). Apophysis posterioris twice length of anterioris. Ostium bursae sur-

rounded by well sclerotized plate dorsally, forming hat-shaped, strongly emarginated at middle of posterior margin. Ductus bursae narrow. Length of corpus bursae longer than ductus bursae. Signum hexagonal in outline, with finely serrated edges.

*Type.* Holotype: male, Yangyang, Gangweon Prov., 4.VI.1987 (K.T. Park). Paratypes: 1♂, same locality and date as holotype, gen. prep. no. 1674; 1♂, 1♀, 1.VII.1987 (K.T. Park), 1♂, Suweon, Gyunggi Prov., 2.IX.1989 (K.T. Park); 1♂, Icheon, Gyunggi Prov., 1.VI.1980 (K.T. Park); Gwanglung, Gyunggi Prov., 1♂, 8.VI.1987 (K.T. Park), 1♂, 27.VI.1986 (K.T. Park); Chuncheon, Gangweon Prov., 10♂, 10.VI.1985, 1♂, 1♀, 7.V.1989, 1♂, 9.V.1989, 4♂, 1♀, 1♀, 16.V.1989, 1♂, 26.V.1989, 5♂, 3♀, 29.V.1989, 1♂, 11.VI.1989, (K.T. Park); 1♂, Mt. Chiag-san, Gangweon Prov., 23.VI.1987 (K.T. Park).

*Distribution.* Korea (South), Europe.

*Remarks.* This species is similar to the European species, *Pseudotelphusa scalella* Scopoli, but it can be superficially separated from the latter by the following characteristics: forewings yellowish brown in ground; subbasal fascia consists of 3 distinct small dots instead of broad dark brown band like fascia. It also differs from the latter in male genitalia: valva more slender, shorter, about 2/3 of genitalia; uncus curved ventrally, whereas almost straight in *scalella*; distal part of 8th tergite semiovate, not slender as much as that of the latter. This species also closely related to *Teleiodes paripunctella* Thunberg, which is distributed in Europe and Asiatic Rusia (Amur), but it can be separated from the latter by the genital structures of both sexes, especially in the long and dilated distal part of uncus and global end of process of juxta in male genitalia, and the shape of ostium palte and antrum in female. Superficially dark brown patches around apex and termen in forewings are also separable characteristics. The species *paripunctella* also was recorded from Hokkaido, Japan (Meyrick, 1932: 194) and China (Meyrick, 1935: 650). He (1932) reported it as *triparrella* Zeller which has been a synonym of *paripunctella*, and stated "Japanese specimens differ from the European form in having dark markings of margin somewhat more strongly expressed, especially a tornal spot of which the sixth discal dot forms the apex; it is undoubtedly the same species". From his explanation, I consider it is certainly a misidentification of this new species. I also examined both sexes of the specimens from Netherlands, borrowed from Rijks Museum, and found that it is identical to this new species.

Larvae of this new species were collected from leaves of *Quercus* sp. in July, 1989 and reared in the laboratory. Considering the known host plants of *paripunctella* such as *Quercus* sp., *Fagus* sp., *Myrica* sp. and *Hippophae* sp., it is considered that this new species belongs a common phyletic line of the latter. Moths appear from the early of May to the early of August, it seems to be bivoltine in Korea.

#### Genus *Telphusa* Chambers

*Telphusa* Chambers, 1872, Canadian Ent., 4: 132.

Type-species: *Telphusa curvistrigella* Chambers, 1872.

Syn.: *Adrasteia* Chambers, 1872, Can. Ent., 4: 149, (Type: *Adrasteia alexandriacella* Chamber, 1872).

*Geniadophora* Walsingham, 1897, Proc. Zool. Soc. Lond., 1897: 71 (Type: *Poecilia extranea* Wals., 1892).

The genus *Telphusa* comprises more than 100 species, well developed in Europe, Africa, America and N. Asia including Far-East, and extending into India. But this genus as well as other related genera in the tribe Teleiodini have not been clearly defined. Many of them which were originally included in the genus have been removed to other related genera, *viz.*, *Teleiodes*, *Pseudotelphusa* by recent authors (Sattler, 1960: Piskunov, 1981: Steuer, 1988). Thus author also placed all species with bifid uncus in the collective genus *Telphusa* Chambers, as Sattler suggested (1982).

Key to the species of *Telphusa* based on superficial and genital characteristics.

1. 8th sternite trapezoidal or widely expanded to lateral sides ..... 2
- 8th sternite divided into two plates ..... 4
2. Uncus strongly bifurcated ..... *inscriptella*
- Uncus slightly emarginated on distal margin of apex ..... 3
3. Valva thin, long; 8th sternite trapezoidal; dark grey fascia on forewings well developed ..... *necromantis*
- Valva absent; 8th sternite widely expanded to lateral sides; fascia on forewings indistinct ..... *quercicola*
4. Length of 8th sternite longer than its width: uncus bifurcated with rather short arms ..... *nigrifasciata*
- Length of 8th sternite shorter than its width; uncus bifurcated with rather long lateral arms ..... *nephomicta*

1. *Telphusa inscriptella* (Christoph), comb. nov. 신나무비늘뿔나방(신칭) (Fig. 53)

*Teleia inscriptella* Christoph, 1882, Bull. Soc. Nat. Mosc., 57, 1: 25.

Type-specimen: Lectotype, female, Yebreuska, USSR, deposited in B.M.

*Adult.* Wingspan, 12–16 mm. It is very similar to the European species *scriptella* in superficial and genital characteristics, but it can be separated from the latter by followings: ground colour of forewings creamy white, suffused with grey scales, dark grey markings much more distinct, scale tufts developed with white scales at outer edges, whereas ground colour yellowish cream, especially yellowish beyond median fascia.

*Male genitalia* (Fig. 19). Eighth sternite elongate-tetragonal with round distal margin; lateral margin almost parallel; anterior margin with round emargination. 8th sternite very short and wide, posterior margin with a small emargination at middle. Uncus deeply bifurcated; lateral arms far from each other at digitate, close each other at base, rather short. Aedeagus very stout, narrowed beyond half, with rather sharp distal end.

*Female genitalia* (Fig. 37). Apophysis posterioris rather long, slightly longer than anterioris. Ostium bursae crescent, posterior margin heavily chitinized. Ductus bursae weak membranous, long; corpus bursae about half length of ductus bursae; signum large, with rather narrow groov, coarsely serrated edges.

*Material examined.* Suweon, Gyunggi Prov., 1♀, 30. III. 1976 (K.T. Park), 6♂, 25♀, 7-9. V. 1989 (K.T. Park), 2♀, 10. IV. 1976 (K.T. Park), larvae spinning leaves of *Acer ginnala* Max. were collected on 28. VII. 1975; 1♀, Suweon, 15. V. 1989 (K.T. Park); 1♂, Mt. Myungji-san, 25. V. 1990 (K.T. Park et B.K. Byun); 2♂, 8. VI. 1977 (K.R. Choi, K.T. Park); 1♂, Chuncheon, Gangweon Prov., 25. VII. 1986 (K.T. Park), 1♂, ? V. 1975 (K.T. Park), larvae collected from the leaves of *Acer ginnala* Max. on 9. X. 1984; 1♂, Yangyang, Gangweon Prov., 4. VI. 1987 (K.T. Park), 1♂, 30. V. 1989 (K.T. Park); 2♂, Mt. Odae-san, 22. V. 1989 (K.T. Park); 3♂, 2♀, Mt. Jumbong-san, 22. VI. 1992 (K.T. Park).

*Host plant;* *Acer ginnala* Max.

*Distribution.* Korea (South), Amur, Ussuri.

## 2. *Telphusa quercicola* sp. nov. 참나무비늘뿔나방(신칭) (Fig. 54)

*Adult.* Wingspan, 12-14 mm. Head dark grey, paler toward frons. Thorax and tegula dark grey, Antennae dark grey, annulate, paler toward end. Second segment of labial palpi fuscosus outwardly, speckled with creamy white scales near base, middle and tip; 3rd segment with white stripes at 1/3 and 2/3. Forewings clothed with dark grey scales; basal, antemedian and median fascia dark grey, weakly developed; dark fuscous patch beyond postmedian fascia surrounded by yellowish white scales around; whitish tip scales developed along margin near apex and tornus. Femur of fore and middle legs yellowish white ventrally; hind tibia fuscous laterally, with yellowish white long hairs above.

*Male genitalia* (Fig. 16). Eighth tergite triangular in outline, set with long hairs posteriorly, with long lateral arms; 8th sternite widely expanded, bandlike, lateral ends narrowed, with small emargination at middle on posterior margin; anterior margin strongly sinuated. Uncus with slightly broadened apex, emarginated at distal margin. Gnathos absent. Process of juxta digitate, rather long. Valva absent. Aedeagus long, longer than total length of genitalia, gently curved at middle, truncated beyond 2/3; apex pointed.

*Female genitalia* (Fig. 34). Apophysis posterioris thin, very long, longer than 2.5 times of anterioris. Ostium bursae with rounded distally by dorsal chitinized plate. Ductus bursae long, about 3 times as long as length of corpus bursae; Corpus bursae semiovate; signum rather small with finely serrated edges.

*Type.* Holotype: male, Suweon, Gyeonggi Prov., 3. VI. 1986 (S.B. Ahan), gen. prep. no. 1670. Paratypes: 3♂, 1♀, same locality as holotype, mid. III. 1987 (W.S. Cho), 2♂, mid. IV. 1987 (S.B. Ahn).

*Distribution.* Korea (South).

*Remarks.* Some of larvae were collected in the banding of straw on the stem of *Quercus* sp., for a hidden place of overwintering larvae.

## 3. *Telphusa necromantis* Meyrick 흑여비늘뿔나방(개칭) (Fig. 55)

*Telphusa necromantis* Meyrick, 1926, Exot. Microl., 3: 276, — Clarke, 1969: 436, — Moriuti, 1982,

part 1: 277, part 2: 212, pl. 13: 4, — Park, 1983: 86.

*Adult.* Wingspan, 10–12 mm. Head and thorax creamy white, speckled with dark scales at base. Antenna simple, black, white scales speckled on posterior. 2nd segment of labial palpi thickened, furrowed beneath, with fuscous scales at base; terminal segment as long as second, with 2 broad black rings. Forewing ground colour white, with 2 broad dark fuscous fascia, first at base and 2nd near middle obliquely, with raised scales on it. Hindwing dark grey; cilia longer on dorsum.

*Male genitalia* (Fig. 15). Anterior margin of 8th tergite with almost round emargination, tapered laterally. 8th sternite about twice longer than width, posterior margin with small emargination at middle. Uncus bifid, with long setae. Gnathos absent. Valva very thin, threadlike, longer than total length of genitalia, evenly tapered, inflated basally. Process of juxta nearly undeveloped. Aedeagus less than 1/3 of valva, narrowed apically, inflated at base.

*Female genitalia* (Fig. 33). Apophysis posterioris twice longer than anterioris. Apophysis anterioris as strong rod. 8th sternite short, slightly sclerotized. Ostium bursae extended from small oval pit on 7th sternite. Ductus bursae membranous, narrow, longer than apophysis anterioris. Ductus seminalis from posterior portion of ductus bursae. Corpus bursae pyriform; signum nearly hexagonal with wide diagonal slit.

*Material examined.* 1♂, Suweon, Gyunggi Prov., 22.VI. 1982 (K. T. Par); 1? Mt. Cheonggyesan, Gyunggi Prov., 4.VI.1986 (K. T. Par); Gwanglung, Gyunggi Prov., 1♂, 3.VI.1982 (K. T. Par), 1♂, 10.V. 1986 (K. T. Par), 1?, 4.VI.1986 (K.T. Park), 1♂, 27.VI.1986 (K.T. Park), 1♂, 1♀, 7.VII. 1986 (K.T. Park); Chuncheon, Gangweon Prov., 4♂, 7.V.1989 (K.T. Park), 1♂, 5.VI.1985 (K.T. Park); 1♂, 22.V.1985 (K.T. Park), 1♂, 2♀, 1.V.1989 (K.T. Park), 1♂, 11.VI.1989 (K.T. Park); 2♂, Chugog, near Chuncheon, Gangweon Prov., 30.VIII.1986 (K.T. Park); 2♂, Mt. Samag-san, Gangweon Prov., 19.VII.1989 (K.T. Park); 1♂, Mt. Odae-san, Gangweon Prov., 22.V.1989 (K.T. Park); 1♂, Yangyang, Gangweon Prov., 30.V.1987 (K.T. Park); 1♂, Sogumgang, Gangweon Prov., 24.V.1988 (K.T. Park); Mt. Deogyu-san, near Muju, Jeonbug Prov., 1♂, 18.V.1989 (K.T. Park); 1♂, 13.VIII.1985 (K.T. Park); 1♂, Mt. Jiri-san, 1000m, Jeonnam Prov., 22.VII.1981 (K.T. Park); 1♂, Mt. Hala-san, Jeju Prov., 30.V.1987 (K.T. Park).

*Distribution.* Korea (South), Japan, China.

*Remarks.* It has been known that larva ties the leaves of *Quercus serrata* and feeds on them. It seems to overwinter in larval stage. Moths appear mostly from the early June to the middle of August in Korea.

#### 4. *Telphusa nigrifasciata* sp. nov. 콘검은띠털뿔나방(신청) (Fig. 56)

*Adult.* Wingspan, 14–17 mm. Head creamy white. Thorax grey speckled with dark fuscous scales; anterior part of tegula clothed with fuscous scales. Antennae short; scape elongated, brown; flagella dark fuscous, paler toward the tip, ciliated with short hairs in male, but not in female. Labial palpi long, beyond vertex; 2nd segment thickened, rough-scaled, dark fuscous to 2/3, rest white, rarely speckled with dark fuscous scales on outer surface; 3rd segment as long as the 2nd, slender with 2 dark fuscous stripes; apex white, pointed. Forewings ground colour ochreous grey; basal fas-

cia dark grey, broad, extended to base on costa, two scale-tufts anteriorly; beyond it a yellowish white scale tuft; a coastal patch dark grey, well developed, several scale-tufts which speckled with yellowish margin almost parallel; anterior margin emarginated roundly. 8th sternite bifurcated into large fanlike plates; anterior margin with a central process which has two lateral arms. Uncus slender, bifurcated at distal 3/4. Gnathos tubular, incurved on dorsal margin, apex broadened. Valva very thin and long, threadlike. Aedeagus short, rather small, narrowed toward distal end.

*Female genitalia* (Fig. 35). Apophysis posterioris very long, longer than abdomen; apophysis anterioris as a strong rod, 1/4 of the former. Ostium bursae strongly sclerotized on middle of 8th sternite, strongly emarginated on posterior margin, with rounded anterior margin. Ductus bursae very thin, Corpus bursae very small; signum rather round with serrated edge both sides.

*Type.* Holotype: male, Mt. Samak-san, Gangweon Prov., 22.VI.1989 (K.T. Park). Paratypes: 36 ♂, 1 ♀, same locality and date as holotype, Chuncheon, Gangweon Prov., 1♂, 4♀, 2.VII.1989 (K.T. Park), 1♂, 19.VI.1990 (K.T. Park), 1♂, 1♀, Seomyun, Yangyang, Gangweon Prov., 1.VII.1987 (K.T. Park); 1♀, Mt. Palbong-san, Gangweon Prov., 5.VII.1990 (S.W. Cho).

*Distribution.* Korea (South).

*Remarks.* This species is closely related to *Telphusa nephomicta* Meyrick and very difficult to separate from the latter by superficial characters, but it can be separated by the followings: head creamy white, whereas greyish scales speckled dorsally in the latter, and distal portion of 2nd labial palpi whitish outwardly. In male genitalia, length of 8th sternite longer; bifurcated distal portion of uncus rather short, less than 1/3 of total length of uncus, and gnathos inwardly curved on dorsal margin, apex much broadened, instead of rather smooth distal end in *nephomicta*. In female genitalia, ostium bursae with rounded anterior margin; signum with more coarsely serrated edge, whereas flat in *nephomicta*.

##### 5. *Telphusa nephomicta* Meyrick 검은띠비늘뿔나방

*Telphusa nephomicta* Meyrick, 1932, Exot. Microl., 4: 194, — Clarke, 1969, Cat. Type Spe. Microl. Brit. Mus. (Nat. Hist.) by Meyrick, 7: 436; — Moriuti, 1982, Moths of Japan, 1/277, 2/212, pl. 13: 4; — Park, Insecta Koreana, ser., 3: 86 (misidentification of *nigrifasciata* sp. nov.).

*Adult.* Wingspan, 14 mm. This species has been known from Japan and China, and it is very close to the previous new species. Some separable characters from the new species are in the greyish dorsal part of head and fuscous at the distal portion of 2nd labial palpi on outer surface. No other striking separable characteristics are not found superficially.

*Male genitalia* (Fig. 18). Length of eighth sternite much shorter than the above new species, distal portion narrowed. Bifurcated arms of uncus rather long, longer than 1/3 of total length, Gnathos nearly straight in dorsal margin, not broadened at apex. Aedeagus short, with inflated base and narrowed apex.

*Female genitalia* (Fig. 36). Very similar to the above new species, but ostium bursae with round anterior margin as shown in fig. and signum with more closely serrated edges.

*Material examined.* 1♂, Namhe, Gyungnam Prov., 25.VII.1985 (K.T. Park).

*Distribution.* Korea (South), Japan, China.

*Host plant.* *Rhus chinensis*. M. It has been reported that larva rolls the leaves of host plant as a shape of pipe and feeds on them, according to Japanese reference (Moriuti, 1982).

#### 6. *Telphusa comprobata* Meyrick 큰흰띠비늘뿔나방(신청) (Fig. 57)

*Telphusa comprobata* Meyrick, 1935, Exot. Microlepid., 4: 584; Moriuti, in Gelechiidae, Moths of Japan, 1: 277, 2: 212.

*Adult.* Wingspan, 18 mm. Head white. Thorax white, with dark grey scales on posterior margin. Tegula white, with dark grey scales on anterior margin. Antennae annulated with dark and white rings. Second labial palpi fuscous at basal 1/3, white beyond it; 3rd segment with 2 narrow dark stripes. Forewings with a broad white oblique band beyond basal fascia. This species was reported from Japan (Honshu) with specimens collected in August, but only a female was collected in June in Korea.

*Female genitalia* (Fig. 38). Apophysis posterioris 2.5 times as long as length of anterioris. Ostium bursae forming a small oval pit on posterior margin of 7th sternite as shown fig. Ductus bursae very thin; corpus bursae semioval, rather small with finely serrated edges.

*Material examined.* 1♀, Mt. Odae-san, Gangweon Prov., 26.VI.1989 (K.T. Park).

*Distribution.* Korea (South), Japan.

*Remarks.* This species looks to be belonged the genus *Telphusa* superficially but its generic status should be considered with dissection of male genitalia, with further available materials.

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## 한국產 Teleiodini族의 分류학적 연구

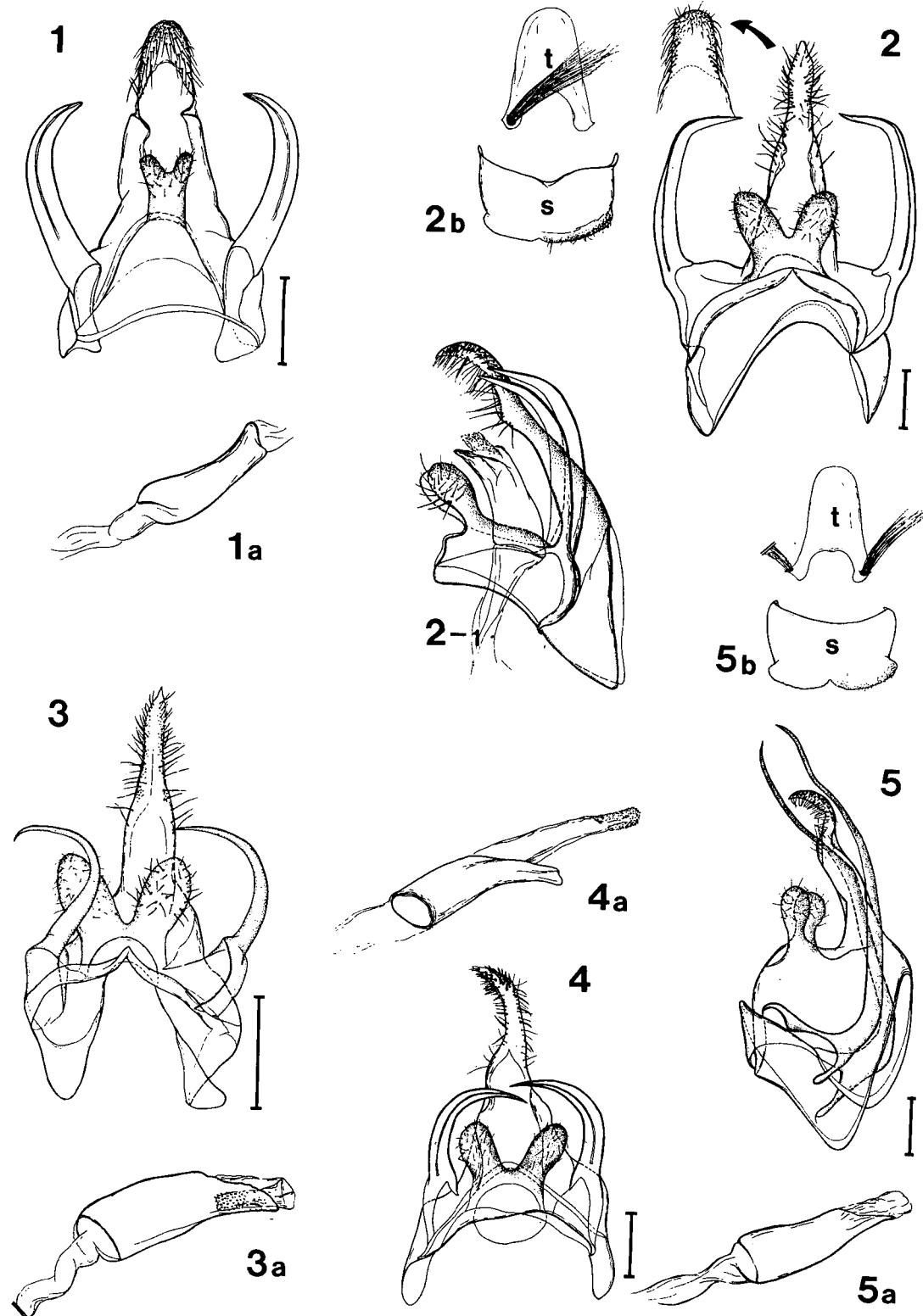
朴 奎 澤

江原大學校 農生物學科

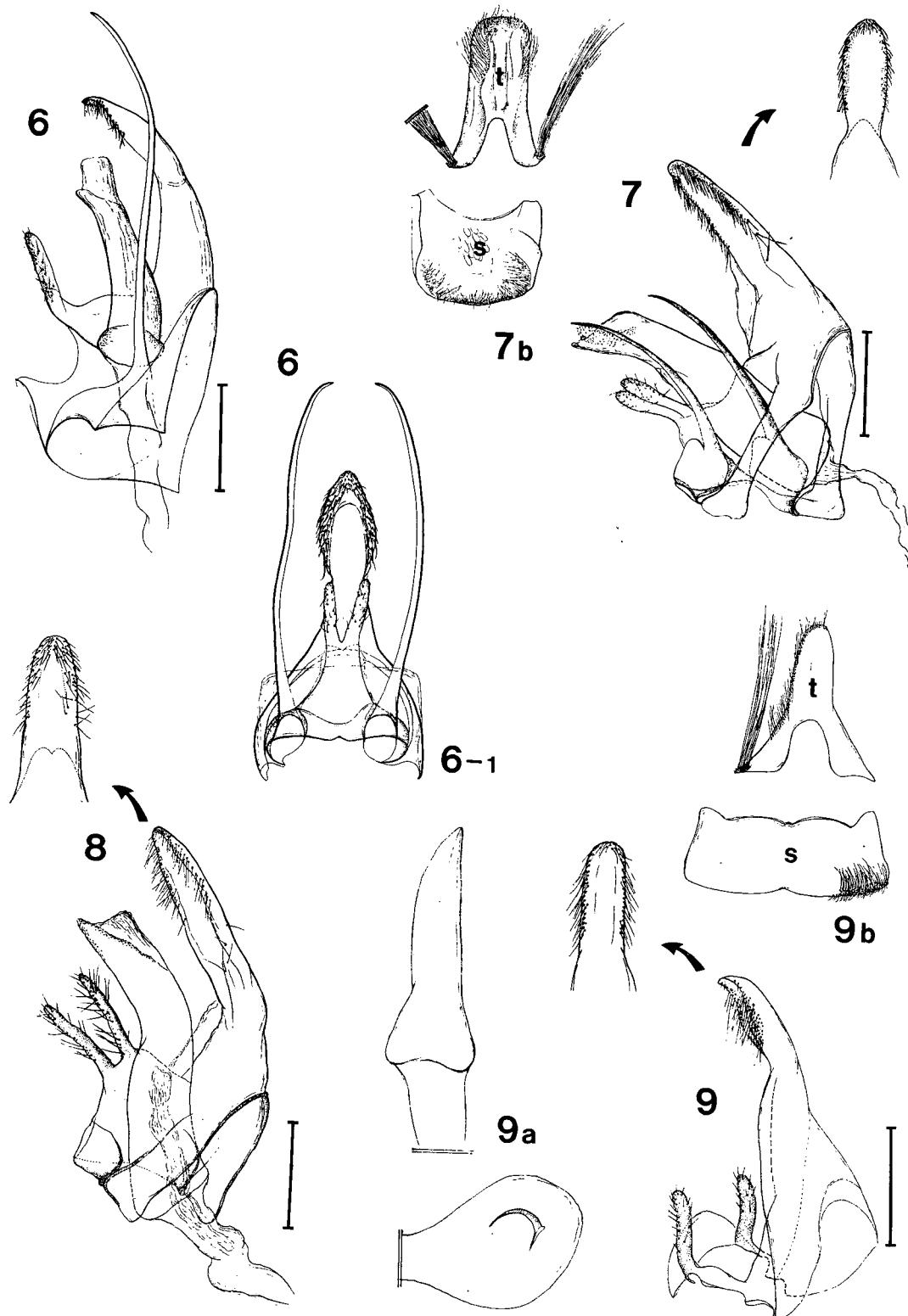
Teiodini族의 분류학적 정리를 통하여 *Teleiodes*屬 11種, *Pseudotelphusa*屬 1種 그리고 *Telphusa*屬 2種을 新種으로 기재하고 4種의 우리나라 未記錄種등 총 20種을 정리발표한다.

검색어 : 분류, 나비目, 뿔나방科, Teleiodini族.

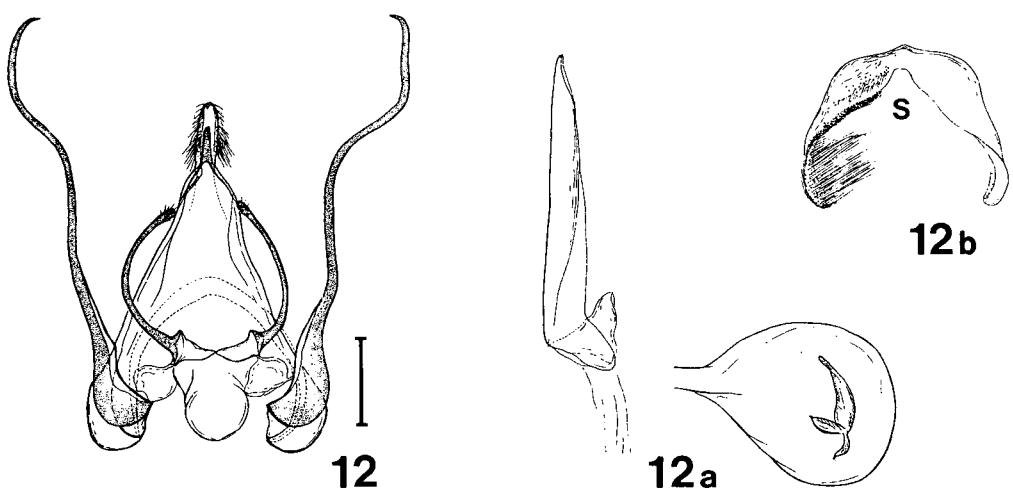
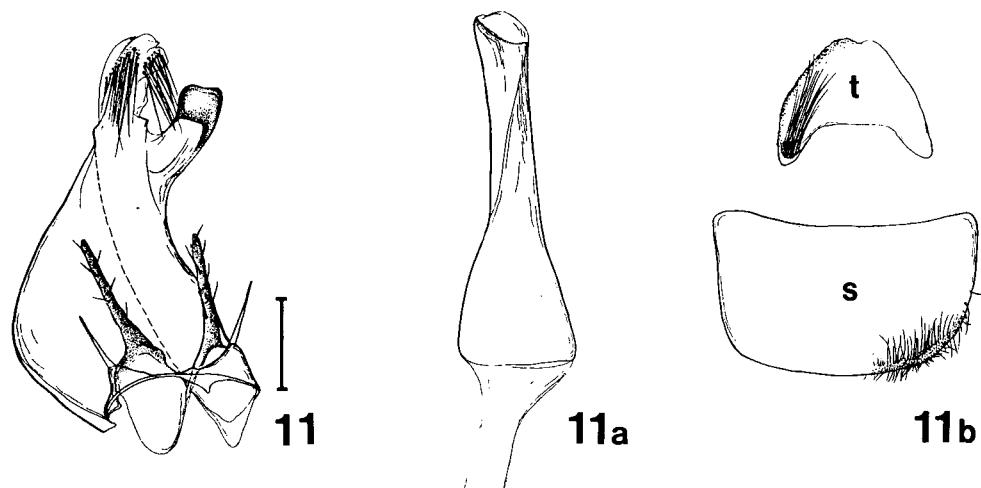
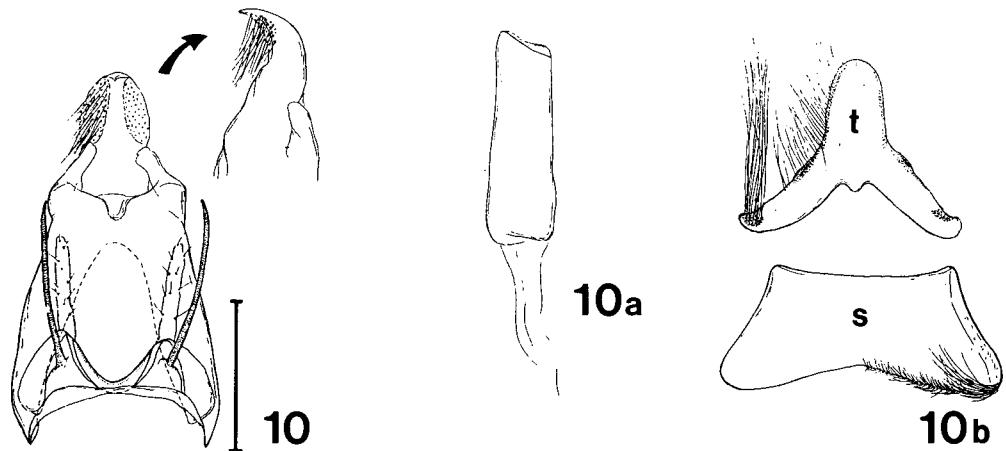
(Received: March 15, 1992)



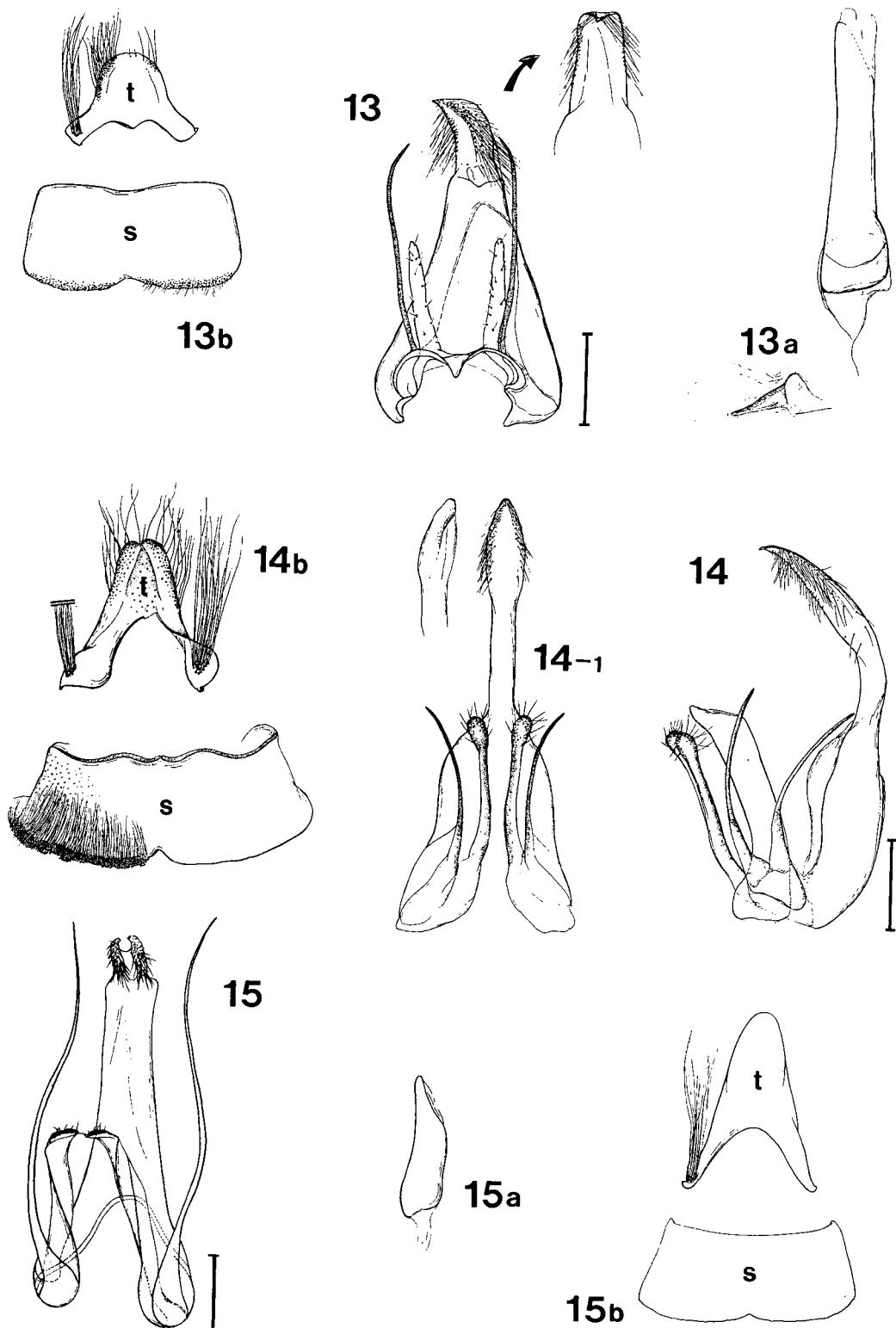
Figs. 1-5. Male genitalia (a; aedeagus) and 8th segment (b): 1, *Teleiodes paraluculella* sp. nov.; 2, *T. orientalis* sp. nov.; 2-1, ditto, lateral view, 2, *T. klaussattleri* sp. nov.; 4, *T. cyrtocostella* sp. nov.; 5, *T. longivalvella* sp. nov (scale : 0.5mm).



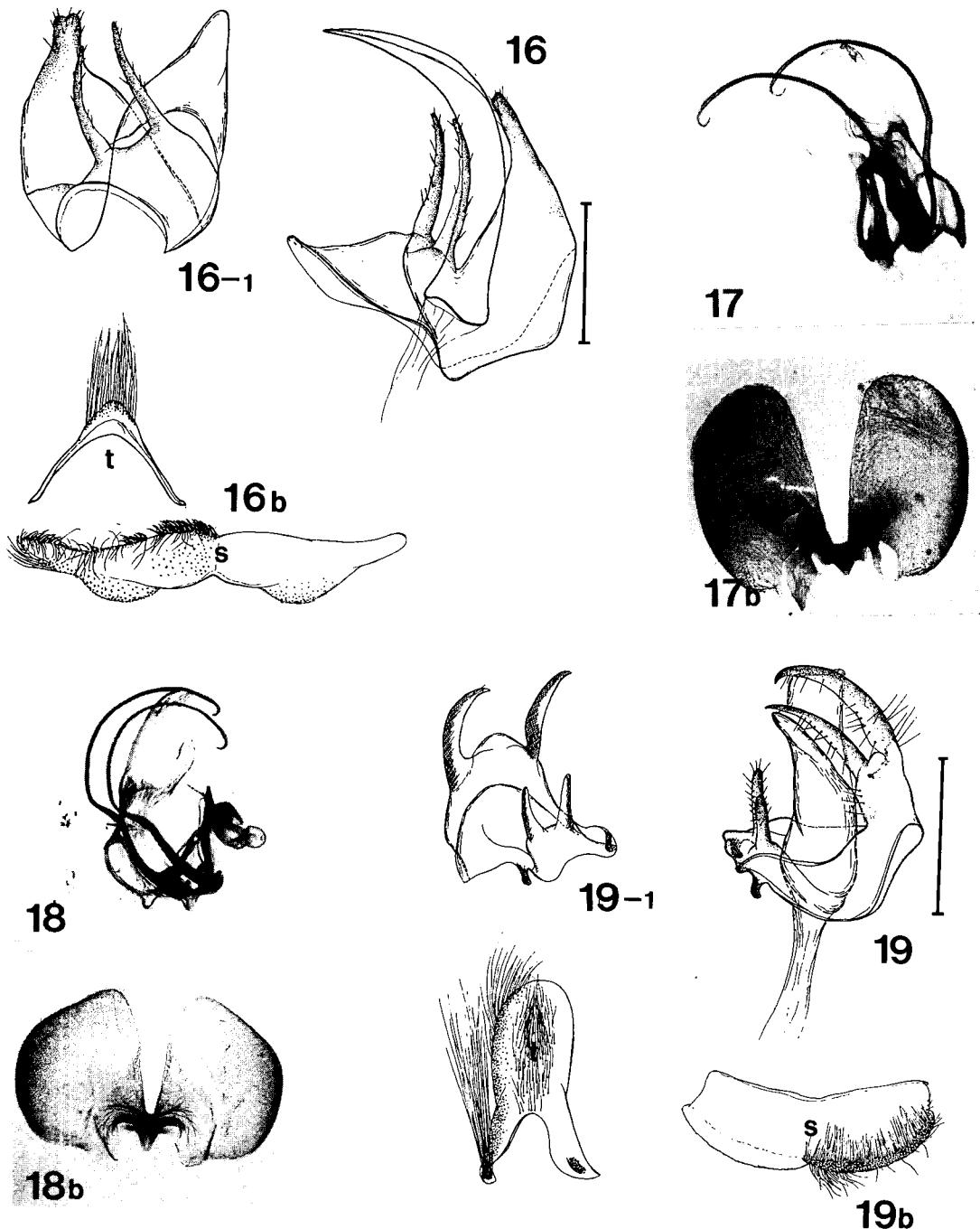
Figs. 6-9. Male genitalia (a; aedeagus) and 8th segment (b): 6, *Teleiodes yangyangensis* sp. nov.; 6-1, ditto, ventral view; 7, *T. falvipunciella* sp. nov.; 8, *T. deogyusanae* sp. nov.; 9, *T. digitilobella* sp. nov (scale : 0.5mm).



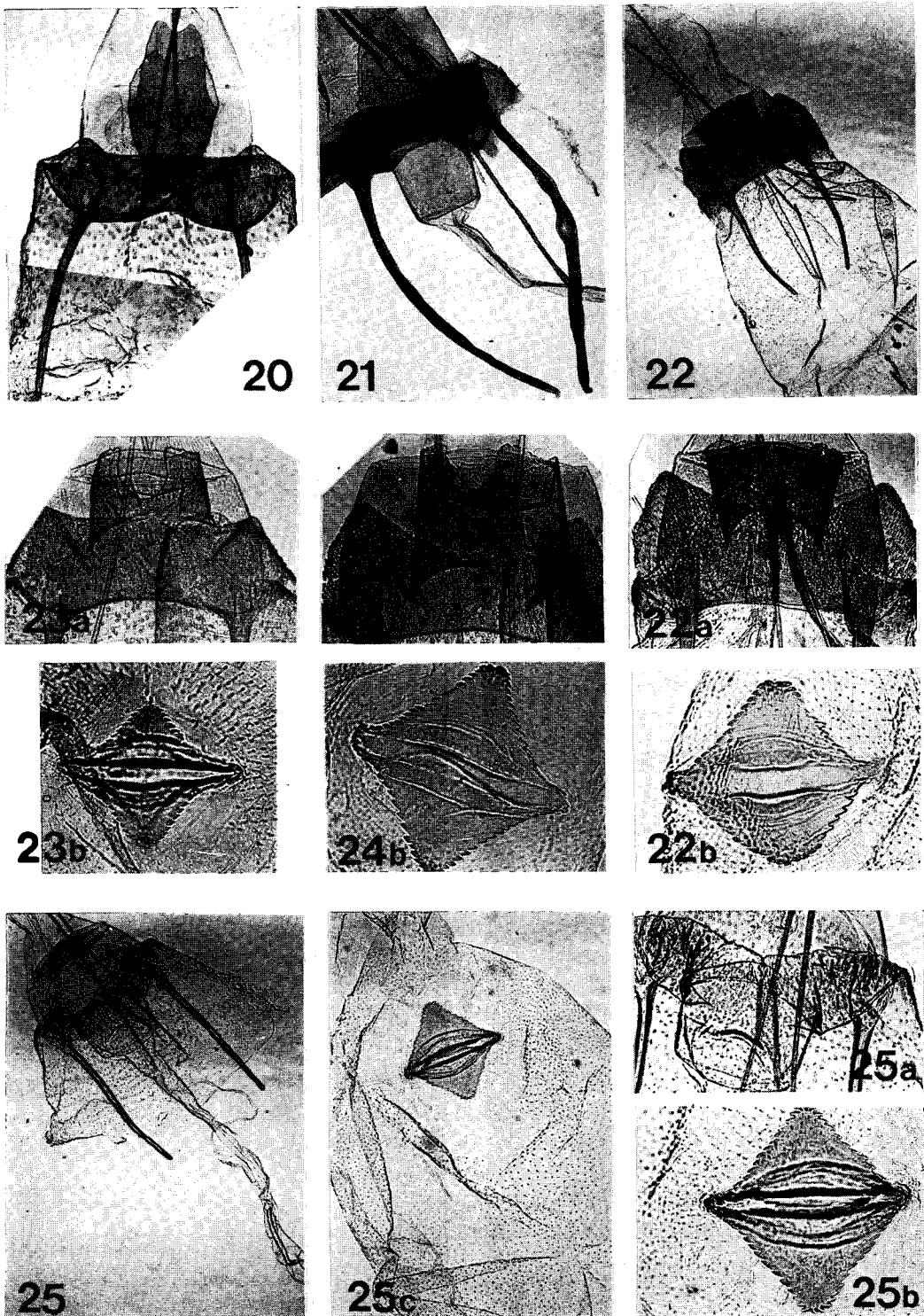
Figs. 10–12. Male genitalia (a; aedeagus) and 8th segment (b): 10, *T. soyangae* sp. nov.; 11, *T. bradleyi* sp. nov.; 12, *T. lineavalvata* Moriuti (scale : 0.5mm).



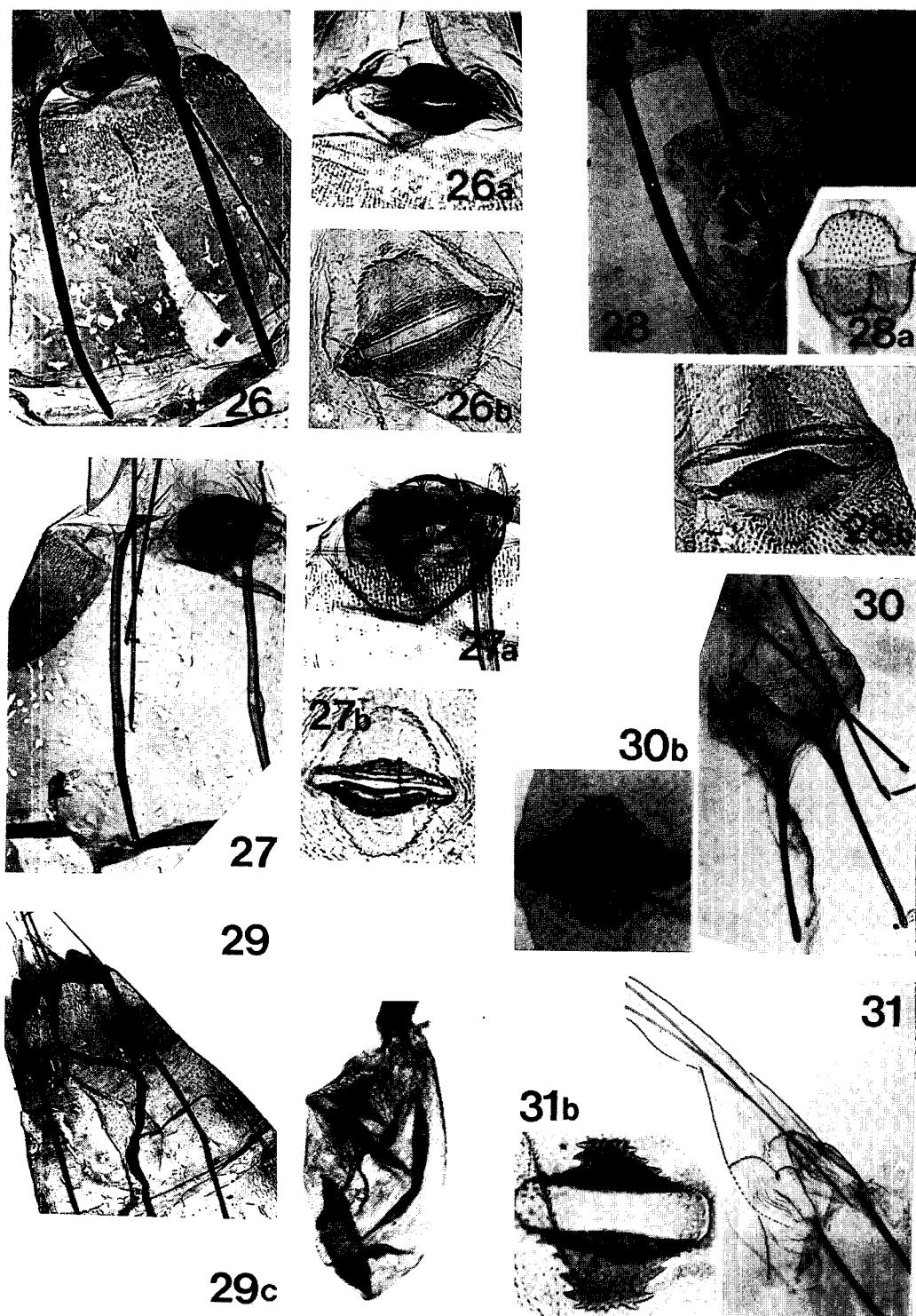
Figs. 13 – 15. Male genitalia (a; aedeagus) and 8th segment (b): 13, *Pseudotelphusa fugitivella* Zeller; 14, *P. acrobrunella* sp. nov.; 15, *Telphusa necromantis* Meyrick (scale : 0.5mm).



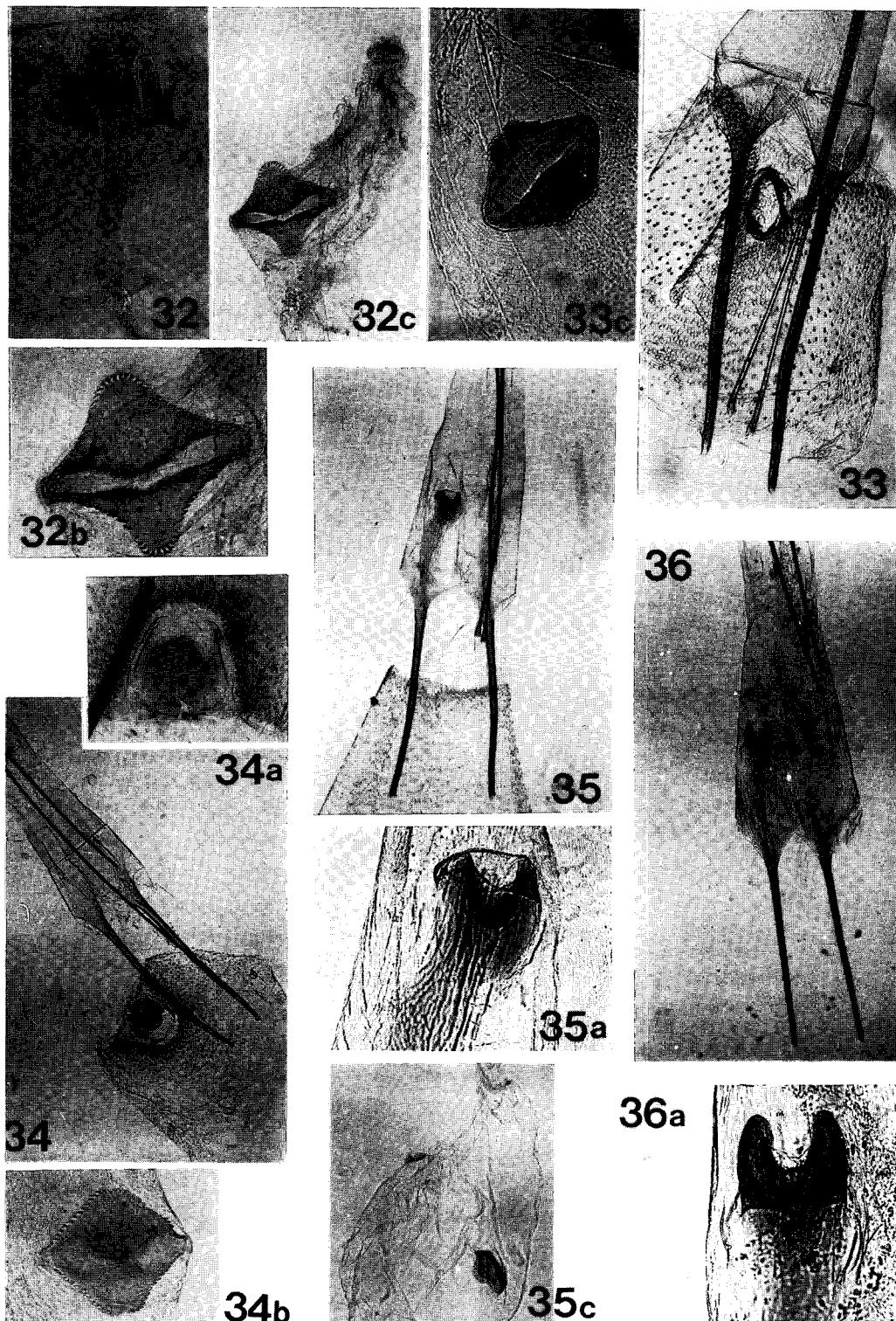
Figs. 16-19. Male genitalia of *Telphusa* (a; aedeagus) and 8th segment: 16, *T. qurcicola* sp. nov.; 16-1, ditto, ventral view; 17, *T. nigrifasciata* sp. nov.; 18, *T. nephromicta* Meyrick; 19, *T. inscriptella* Chr.; 19-1, ditto, ventral view (scale : 0.5mm).



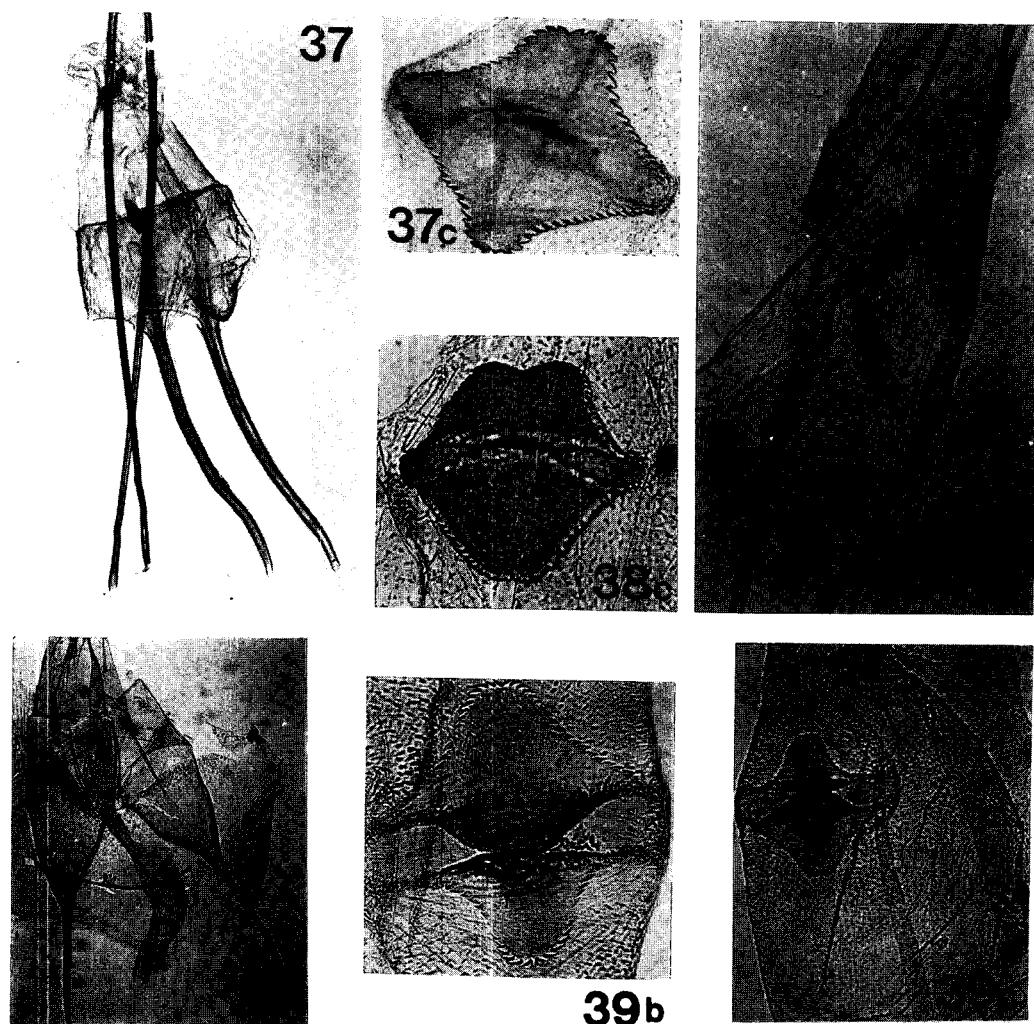
Figs. 20-25. Female genitalia of *Teleiodes* (a; ostium bursae (10x), b; signum (20x), c: corpus bursae (5x or 10x): 20, *T. paraluculella* sp. nov.; 21, *T. luculella* (Zeller), Hungarian specimen; 22, *T. cyrtocostella* sp. nov.; 23, *T. orientalis* sp. nov.; 24, *T. longivalvella* sp. nov.; 25, *T. klaussattleri* sp. nov.



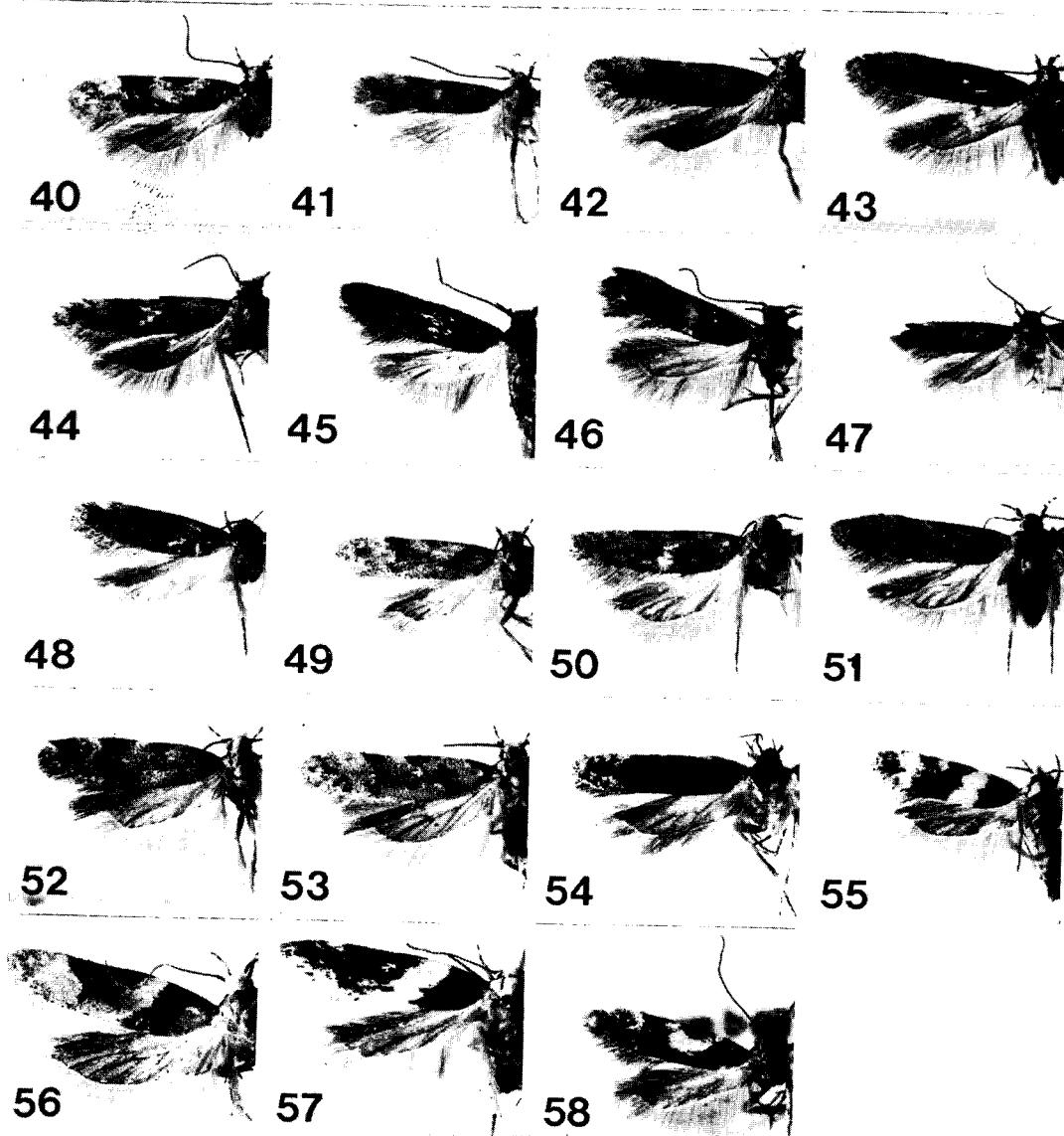
Figs. 26-31. Female genitalia (for caption, see figs. 20-25): 26, *T. deogyusanae* sp. nov.; 27, *T. flavidipunctella* sp. nov.; 28, *T. digitilobella* sp. nov.; 29, *T. yangyangensis* sp. nov.; 30, *T. soyangae* sp. nov.; 31, *Pseudotelphusa fugitivella* Zeller.



Figs. 32-36. Female genitalia (for caption, see figs. 20-25): 32, *Psedotelphusa acrobrunella* sp. nov.; 33, *T. necromantis* Meyrick; 34, *T. quercicola* sp. nov.; 35, *T. nigrifasiata* sp. nov.; 36, *T. nephomicta* meyrick.



Figs. 37-39. Female genitalia (for caption, see figs. 22-24): 37, *T. inscriptella* Chr.; 38, *T. comprobata* Meyrick; 39, *T. lineavalvata* Moriuti.



Figs. 40-58. Adults: 40, *Teleiodes orientalis* sp. nov.; 41, *T. paraluculella* sp. nov.; 42, *T. klausstatteri* sp. nov.; 43, *T. cyrtocostella* sp. nov.; 44, *T. longivalvella* sp. nov.; 45, *T. yangyangensis* sp. nov.; 46, *T. feavipunctatella* sp. nov.; 47, *T. deogyusanae* sp. nov.; 48, *T. digitilobella* sp. nov.; 49, *T. soyangae* sp. nov.; 50, *T. bradleyi* sp. nov.; 51, *Pseudotelphusa fugitivella* (Zeller); 52, *P. acrobrunella* sp. nov.; 53, *T. inscriptella* Chr.; 54, *T. querxicola* sp. nov.; 55, *T. necromantis* Meyrick; 56, *T. nigrifasciata* sp. nov.; 57, *T. comprobata* Meyrick; 58, *Telphusa luculella* (Hübner), from England.